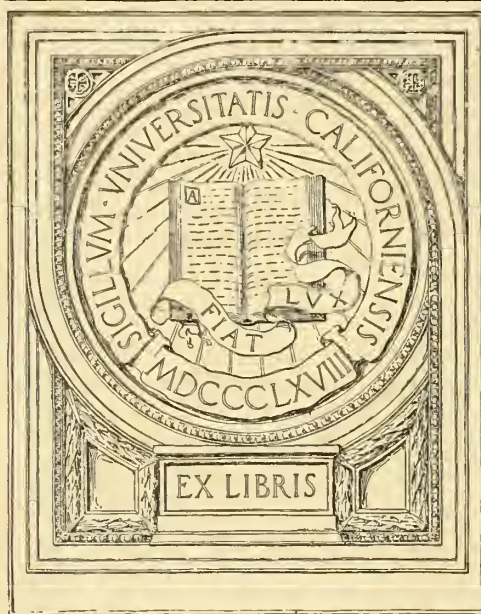



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THE DOCTOR OF FIFTY YEARS AGO.*

LEON J. MENVILLE, M. D.†

NEW ORLEANS.

The Louisiana State Medical Society at each yearly convention holds one evening session to which it has the honor of inviting the public. Our association is especially fortunate and happy on this particular occasion in sharing with this splendid gathering the celebration of the golden anniversary of its united existence as a medical organization. Fifty years ago through the activities of such men as Chaille, Lewis, Bemiss, Richardson, Layton, Herrick, Solomon, Pratt, Watkins, Logan, Dupree, Friedrichs and many other outstanding and prominent physicians, there was laid the foundation and corner stone of our organization. These pioneers of organized medicine, working against almost unsurmountable obstacles and under the most trying conditions, realized fully that only through the united effort of medical men of high standard throughout the entire state could the most noble and ideal achievements of our profession be consummated. Appreciating fully the glorious work of these splendid physicians of fifty years ago, and with the additional sentiment that my own late father was of their number, it is my earnest desire, with whatever little power the good Lord has endowed me, inadequate as it is, to pay homage and tribute to these path blazers through the dense forest of

the practice of medicine as it existed at that time. It is for this reason, I have selected as the topic of my address, the doctor of fifty years ago. Turning back therefore, in retrospection, the calendar years for one-half of a century or to those leaflets marked 1879, we might place ourselves for a short while in the environmental conditions under which they pursued their chosen avocation.

In order to properly compare the situation of the practice of medicine as it exists today with that of 1879, we must consider the subject from various aspects. For example, the conveniences and facilities existing at that period, the educational status of the people, the achievements of our medical science and the scope of its armamentarium in addition to other features relative to that epoch.

As a preamble it seems fitting to touch briefly upon the code of ethics in effect among the profession at that time. In order to emphasize this, I will take the occasion to abstract certain quotations from a copy of their code. It was understood by them that "a physician should not only be always ready to answer a sick call, but must also be mindful of the obligations imposed on its discharge and that the only tribunal to judge his actions and impose penalties on carelessness or neglect was his own conscience. Every case committed to the charge of a physician should be treated with attention, steadiness and humanity. Reasonable indulgence should be granted to the mental imbecility and caprices of the sick. Secrecy and delicacy, when required by particular

*Presidential Address, Semicentennial Celebration, Louisiana State Medical Society, April 9, 1929, New Orleans.

†President, Louisiana State Medical Society.

circumstances, should be strictly observed, and with the most scrupulous regard to fidelity and honor. A physician should not be forward to make gloomy prognostications, because they savor of empiricism, by magnifying the importance of his services in the treatment or cure of the disease. But he should not fail, on proper occasions, to give to the friends of the patient timely notice of danger when it really occurs; and even to the patient himself, if absolutely necessary. This choice, however, is so peculiarly alarming when executed by him, that it ought to be declined whenever it can be assigned to any other person of sufficient judgment and delicacy. For the physician should be the minister of hope and comfort to the sick; that, by such cordials to the drooping spirit, he may smooth the bed of death, revive expiring life, and counteract the depressing influence of those maladies which often disturb the tranquility of the most resigned in their last moments. The life of a sick person can be shortened not only by the acts, but also by the words or manner of a physician. It is, therefore, a sacred duty to guard himself carefully in this respect, and to avoid all things which have a tendency to discourage the patient and to depress his spirits.

"The first duty of a patient is to select as medical adviser one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist: and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive.

"A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered him by his physician; for these are of such a character, that no mere pecuniary acknowledgment can repay or cancel them."

We cannot help but admire and respect these crusaders of medicine for having such high ideals to direct them in the righteous path of medicine.

We physicians of this present age cannot fully appreciate the many difficulties confronting the doctor of fifty years ago in the practice of his profession, especially the country doctor remotely situated from the city. Two great obstacles were outstanding at that time preventing the dissemination of medical progress among the country doctors, namely, the bad roads and the illiteracy existing in the rural districts. We are given an interesting narrative appertaining to these two conditions in the annual oration of Dr. Stanford E. Chaille delivered on April 10, 1879, at a meeting of the Louisiana State Medical Society in which he states: "The tax on time and money of the traveler, from parts of this state to New Orleans, is as great as from this city to New York and another serious obstacle to our success is presented by the deplorable fact that in this state about one-sixth of the white and seven-eighths of the colored voters, in fact, more than half of all the voters cannot write their names. Hence the education of every citizen, black as well as white, is of infinite importance to the success of this society, as of every other interest of the state." We might mention here that the doctor practicing in the city was not affected as much as the country doctor by these conditions. As far as the roads were concerned he was able to practice rather comfortably by means of the horse and buggy whereas the doctors in the country had to utilize many different modes of conveyances in answering the call of the sick, such as the horse and buggy, horse-back riding and the man-powered wood boats, in the forms of the skiff and the pirogue. As an example of the slowness of these modes of travel and also illustrating the handicap in which the country doctor was often placed, I wish to recite an authentic case occurring at this period as reported by Dr. R. H. Day of Plaquemines in 1879. Dr. Day states: "On the eighth of February, 1879, about 10 p.m. I was called to visit in the country, distant ten miles, a colored boy named Charles Norman, about 16 years of age, said to be cut

in the abdomen. The night being dark and the roads in bad condition, I did not reach the house where the wounded boy was lying until 10 a. m. of the ninth. Obligated to make the trip on horse-back, I could take with me no instruments except my pocket case, and no medicines except a vial of chloroform and one of morphine. My pocket case contained no sutures or thread of any kind and only ordinary suture needles. I was confronted with a formidable injury consisting of a cut into the abdominal cavity with an incised wound of the stomach. Having no fine silk ligature nor carbolyzed catgut with which to sew up the rent, the question presented to my mind was whether to sew up the stomach with Coates coarse cotton thread, or return it unsewed and endeavor to approximate the cut edges and immobilize it by the compress and roller. I decided to take the latter alternative and the happy results demonstrated the wisdom of my decision." We can appreciate from this citation the adverse conditions under which Dr. Day was obliged to work and also that it took him twelve hours to travel a distance of only ten miles, averaging less than a mile an hour. In my personal experience with country practice as recently as twenty-five years ago, I made a call one night, leaving home about 8 p. m. traveling by pirogue through the marsh of South Louisiana a distance of about five miles. I did not reach my destination until 1 a. m., consuming five hours in making the trip. Today this same trip is made in fifteen minutes by physicians traveling in automobiles over a gravel road, paralleling the canal in the marsh through which I previously traveled.

The doctor of today is fortunate in having an excellent system of gravel roads that spread to the remotest parts of Louisiana making the practice of medicine as alluring, comfortable and safe in the country as in the cities. In addition to this it will not be long before many of our roads will be hard surfaced, thus intimately connecting the country doctor with his fellow doctor in the cities.

We are told that there were but 287 practising physicians in New Orleans in 1878, of which 93 were irregulars. The 195 regular physicians were called upon to combat a terrible epidemic of yellow fever. New Orleans with a population at that time of 210,000 had 10,717 deaths from all causes and 4,056 of these were from yellow fever. It is not surprising that Dr. S. M. Bemis, Vice President of the State Medical Society, on April 9, 1879, delivering the President's address in the absence of the President, said: "that the people from Maine to Texas were anxious and alarmed, that the people of Louisiana were looking to the doctors of this state for protection." Dr. Bemis further said: "We must be mindful of the fact that other agencies exist in our midst which wage incessant war upon human health. First to be named is malarial poison. I take it to be strictly true, that no considerable area in this state is exempt from this poison. Whilst the laws which govern its evolution are well understood, we are powerless to intercept its development because the measure of drainage positively necessary to this end cannot at present be undertaken. It may be hoped that at no very distance day sanitary surveys may be ordered under the supervision of the National Board of Health, looking to the arrest of malarial diseases in this state." He also spoke of the unsanitary condition of New Orleans, which was at the time called the "Plague Spot of the Nation." He stated, however, that it is within the compass of human exertion to render this city as healthy as any other similarly situated, as regards climate and local surroundings. "It might be regarded as wise," he goes on to say, "to appoint committees to report at our next meeting upon the sanitary state and requirements of various of our larger cities and towns and even rural localities." It would appear therefore that the doctors of fifty years ago were instrumental in a large measure as pioneers in starting the sanitary machinery calculated to eventually remove the stigma of New Orleans, from

the "Plague Spot of the Nation" to one of the healthiest cities in the world. If the conditions were as bad as pictured here in New Orleans with a semblance of organization, what must it have been in the state, without organization. In the year 1878, according to Augustin's History of Yellow Fever, there were 36,320 cases of yellow fever with 5,397 deaths in the State of Louisiana. After enduring this appalling calamity the doctors realized that in order to make their fight against disease more effective it was necessary that they organize a State Medical Society which was accomplished in the year 1879.

STATE MEDICINE.

It is pathetic to relate that during these trying times there were in New Orleans, 93 irregulars or quacks practicing medicine, plying their trade on the innocent public, hence the need of state medicine. We note with interest that a committee of physicians were appointed with medical recommendations to the Constitutional Convention, asking that the legislature shall provide for the interest of State Medicine in all of its departments: for public hygiene or preventive medicine, for medical education, institutions for the sick and infirm, for medical jurisprudence, and for the establishment and maintenance of a State Board of Health and Vital Statistics for the whole state, in order to protect the people from all contagious and infectious diseases. At the same time steps were instituted to eliminate all unqualified practitioners of medicine from Louisiana.

Time has answered many of these recommendations and we must admire the foresightedness of these wise physicians. We can with pride point to our State Board of Health as ranking with the very best in the land and which has been responsible in a very large measure to the healthfulness of the State of Louisiana. In addition to the health board a State Board of Medical Examiners was established with the purpose of licensing duly qualified physicians to practice medicine and prosecute all viola-

tors of the medical practice act thus protecting the people of this state against quacks and isms.

Fifty years ago Dr. Chaille propounded the following questions that deserve consideration at this time. "When will Louisiana have such a General Hospital as has Massachusetts, so excellent that even the wealthiest of the state seek its pay wards for their relief?" In answer to this question we can at present point with pride to our own Charity Hospitals. So highly are these hospitals regarded that even our wealthy people seek admission. This, of course, is unnecessary and deplorable as it serves only to deprive some of those unfortunates who are really deserving of free services.

Again Dr. Chaille asks, "When will Louisiana make such provisions for its insane that tender hearts will cease to be shocked by the necessity of confining these poor unfortunates to our jails and prisons?" We find an answer to this question fifty years later in our present State Institutions for the Insane. We have here in Louisiana several state institutions for this purpose where insanity is being treated and at times cured and wherein they are utilizing the most modern and scientific methods, employing a corps of expert physicians who devote their entire time to the study and treatment of those unfortunate human beings. Through such activities of our people we are proud to say that at this time the jails of Louisiana are not filled with the insane as they were years ago. These institutions stand as gigantic monuments to the sound judgment of our citizens and the great confidence which they demonstrate toward our medical profession.

MEDICAL EDUCATION.

From the standpoint of medical education existing in our state fifty years ago it is interesting to note what Dr. C. J. Bicham stated in an address on medical education delivered in 1880 before the Louisiana State Medical Society. "I am proud to say that the Medical Department of the

University of Louisiana now 48 years since its first organization, has always held itself equal to the first, has maintained in all respects a dignified position, and has been held in high esteem by the very best schools and faculties of the land. It has from the first occupied high ground, taken from rank, and has nobly maintained it to the present. Her faculties have always been highly respected both in this country and abroad."

It can be seen from Dr. Bicham's statement that the Tulane Medical School had already been in existence for nearly half a century prior to 1879. This school as we all know has grown to such wonderful proportions that it occupies a foremost position among the medical colleges of the world. There is no doubt that its existence during the early period formed a most substantial stimulus to the medical achievements of the profession not only in the city of New Orleans, but in the state of Louisiana and even to the entire Southland. As a matter of fact many of the faculty constituted not only charter members of our society but were prime movers and organizers. One of its eminent professors, Dr. Ernest Lewis, is still a member of our organization and we recall with delight the wonderful admiration held by our city and profession for this noble man as shown by the demonstration given him a few years ago on the occasion of the celebration of his sixtieth anniversary of medical practice.

It affords me great pleasure and honor, to add that we have here with us tonight as one of our speakers of the evening, a man who was a student of Tulane Medical School, while not quite so far back, at least shortly thereafter: a man, whose activities, wonderful mind and outstanding achievements, have formed a perfect bulwark and beacon light to the local profession—aside from the fact that his accomplishments have placed his name among the foremost surgeons of the world, bringing glory to our city and state. I pronounce

his name with reverence, respect and love, Dr. Rudolph Matas.

MEDICAL ACHIEVEMENTS.

It is through the enumeration of the distinctive advances made in the field of medicine in the last several decades, that one can realize the great aids and facilities of which the doctor of fifty years ago was deprived. From the diagnostic standpoint, he was obliged to rely almost entirely upon his power of observation and his skill of physical examination. While there is no doubt, he had developed these later to a high degree, nevertheless there were limitations beyond which he could not extend.

In order to do justice to the program of medical accomplishments of the present day as compared to fifty years ago, it would necessitate employment of much more time than I feel it is my privilege to use. I must therefore merely enumerate certain of the more important facilities and discoveries through which our present medical fraternity are better able to diagnose, treat and cure the ills of mankind.

From the standpoint of preventive medicine the advent of various vaccines and serums against such diseases as typhoid, tetanus, diphtheria and the refinements in Pasteur treatment and smallpox vaccination, have been of very great value.

In the field of diagnosis of diseases, innumerable advantages have come into every day use which were unknown fifty years ago. The most valuable information is now possible through the laboratories of pathology, bacteriology, radiology and physiological chemistry. These wonderful facilities of which the doctor of old was almost entirely deprived, are now serving as a most valuable aid in the recognition and diagnosis of disease. In this manner efficient treatment may be applied thereby preserving and prolonging human life. It is probable that in this particular field of diagnosis the profession of today is most fortunate as contrasted with our fellow practitioners of fifty years ago. At present,

throughout the state there are available laboratory facilities which has rendered practical the accurate diagnosis of cancer, tuberculosis, malaria, syphilis, typhoid and innumerable diseases.

From the medical treatment aspect, many most valuable agents more recently discovered are now at our disposal such as serums for diphtheria, meningitis, radium as employed in the treatment of malignancy and other conditions, emetin in amebic dysentery, salvarsan in syphilis, insulin in diabetes and many other remedies of lesser importance.

From the surgical standpoint, the advances and facilities of today as contrasted with those of fifty years ago are most awe inspiring. The improvements in asepsis, the inventions of operative instruments, and in general the present equipments of the modern surgical hospital are advances that have done much in aiding our present surgical progress. The operative technique and operations devised are sufficient to fill up volumes in the literature. The skill and capacities of our modern surgeon and the results obtained by them have saved many lives and rendered previously hopeless conditions now easily conquered. Such conquests would no doubt have been achieved by the doctor practicing in 1879 had he been so fortunate as to have possessed our present armamentarium and equipment. It was not that he was lacking in skill and acumen but that the progress of his era had not reached the achievements of the present period.

Although it is true that we are celebrating on this occasion the semi-centennial anniversary of our state medical organization, it is nevertheless but meet and proper that we commemorate and honor those responsible for its very organization. It is for this reason, that I have endeavored through these remarks to call attention to the hardships and strife under which our fellow confrere of fifty years ago practiced his profession. He is entitled to our grate-

ful remembrance and is worthy of a monument upon which should be etched an epitome of his noble life dedicated to the service of his fellowmen. We cannot pay sufficient tribute to that gallant, brave and chivalrous doctor who practiced his profession quietly and without ostentation amidst almost unsurmountable difficulties and performing acts of heroism that might well be emulated by the physician of this time and day.

THE OLD ATTAKAPAS COUNTRY AND MEDICAL SOCIETY.*

FRED J. MAYER, M. D.,

OPELOUSAS, LA.

On receiving the invitation of the Committee of Arrangements, through the courtly chairman, Dr. Gelpi, it was coupled with the admonition, "Time limit, ten minutes," naturally suggesting the couplets:

"Mother may I go to swim today?

Yes, my darling daughter,

Go hang your clothes on a hickory limb,
But don't go near the water."

Paul Gelpi says:

"You must speak tonight

For ten minutes of our precious time.

Then sew up your darn'd mouth hard and
tight,

And tell us the rest in pantomime."

Hence these pictures—this map of the Attakapas, showing its topography and boundries, this Rembrandt of its heroine, Evangeline, one-half of whose face reflects love's bright young dream, while hope springs eternal in her lovely breast, the other half, adumbrated by the sinister misfortune, following her failure to find Gabriel, the blacksmith; the other painting, after Murillo (and there are many others after her), represents the modern Evangeline, in carnival evening dress, *i. e.*, "a

*Read before the Louisiana State Medical Society, Semicentennial Celebration, New Orleans. April 9, 1929.

dress that is suited to Eve"; the photograph represents Dolores Del Rio in the character of Evangeline. The great mistake made by the unfortunate maiden was not in falling in love with a doctor instead of a son of Vulcan, she might have avoided the vulcanizing of her heart strings, the din of the anvil chorus of "Sweet bells jangling out of tune," and sing, instead, "Home, Sweet Home," "Rock-a-By, Baby," or "Father, dear father, come home with me now, the clock in the steeple strikes two," and then—alimony. But there is no accounting for the taste of women, "*De gustibus non disputandum.*"

But a truce to badinage and in all seriousness, since it took the Great Architect of the Universe six aeonic days to complete the superb work of creation, how in the reason can it be expected of a mere mortal, in ten minutes, to do justice to the Attakapas—the finest hundred square miles on the planet. As a matter of course, it is not intended to assert that the Attakapas is more fertile than the valleys of the Mississippi, the Red, Nile, Ganges, Tigris, Euphrates, Orinoco, Amazon, or any other tropical delta, nor healthier than a mountain resort. To do so would be to write oneself Kish's ass, on a par in mentality with the three drunken students on their way from a "speak easy," when they encountered a venerable cleric on his way to church, and forgetting that deference due to his age and calling, with ribald laughter addressed him as follows: "Good morning, Father Abraham," said the first; "Good day, Father Isaac," pip'd the second; "Good night, Father Jacob," hiccuped the third. The venerable, taking in the situation, with a twinkle in his eye replied with dignity: "I am neither Abraham, Isaac, nor Jacob, but Saul the son of Kish. I have been sent to find my father's asses and behold I have found them!" The facts it is desired to convey are these: That the Attakapas in fertility, climate, salubrity, meterological conditions, navigable rivers, water, rail, bus, and auto

transportation on good highways, educational advantages, churches, lodges of all denominations, religious and political toleration, good government, hunting, fishing, and trapping, mineral wealth, citrus, fig, pecan and other orchard potentialities, truck, dairy and poultry farming, hospitality, scenery, with a background of romantic history, present a congeries of advantages, a group of fortuitous conditions and a wealth of raw materials unequaled on God's green footstool. Gleanings of the annual waste of raw material would enrich an empire.

The Attakapas gets its name, which means "man eater," from a tribe of cannibals who once dominated the section. This fierce tribe was exterminated in pre-colonial days by a coalition of Opelousas, Alibamons and Chocktaws, who divided the conquered territory between them, reserving hunting, fishing, and trapping rights, throughout the territory, which is composed of bluff and lowlands, heavily wooded, abounding in game, alluvial prairies, resting on a clay foundation, long leaf piney woods and sea marsh, the entire area reticulated with rivers, bayous, streams and fresh water lakes, all abounding in fish; brakes of the wood eternal—"Over head the towering and tenebrous boughs meet in a dusky arch and trailing mosses in mid air wave like banners that hang on the walls of ancient cathedrals." The prairies are dotted with islands of oak, china gum, and pecan. Why even horse hair grows on the trees. The moss when cured becomes the vegetable horse hair of commerce, has a high value, and yet the raw material can be had for the getting.

Every foot of this vast area is cultivable, including swamp and sea marsh when reclaimed, the latter when rid of the C. solicitans and protected by a sea wall would provide a Riveria unequaled by the Bay of Biscay for surf bathing, not to speak of citrus orchards of "Louisiana sweets" alongside of which the finest sun-

kist product of California would be apples of asphaltum, and Florida's boasted product as insipid as an ancient flapper's desicated kiss. All the staple crops of the temperate and sub-tropical zones, truck, nuts, flowers, fruits, flourish here. Lands cultivated for a century and a half with a rotation from cotton to corn and cane to rice, and back again, without fertilization, and then turned to grass quickly recover, some of these grasses not only fatten stock but flavor, stock keeps seal fat all year without shelter, in despite of the tick; rid of the latter, there are no finer pastures in the world; some of these grasses would make paper stock; this with the luxuriant cornstalk in a "Cellulose Age" is a valuable future asset; the "grass grows more in a night than in a Nova Scotia summer," and yet there are fewer grass windows than down East. So great is the recuperative power of the soil, that in a few fallow years it responds to wild nitrogen gatherers and the tickling hoe bringing forth a normal increase; underneath the surface is an inexhaustible, potable water supply at a depth of from 30-300 feet, supplying the towns and irrigation plants.

Gas is found not only in the hookworm clubs and the political arenas but throughout the territory suitable for illumination and fuel purposes; petroleum of varying asphaltum and parafin bases underlies the area, encroaching on the gulf where pools are formed affording safe anchorage for storm-stressed vessels; there are vast deposits of pure chloride of sodium and sulphur, the greatest in the world. These two bases of organic chemistry are pleading for the establishment of chemical and pharmaceutical factories from the Calcasieu to the Atchafaylaya rivers.

The fur industry is so great that you may readily infer that fur dealers in pursuance of the fur trade might go further and fare worse. One parish alone (Iberia), made one shipment of half a million dollars. The fur industry of Louisiana amounts to seven and a half million dollars.

The fishing possibilities, both fresh water and deep sea, are incalculable: perch, trout, flounder, Spanish mackerel, redsnapper, gaspago, pompano, turtles, shrimp, prawns, oysters, crabs, crawfish, blue channel, spoonbill cat, the Louisiana salmon, open up a vista of piscatorial possibilities and bivalvelar values that stagger belief, they could be made to pay the State debt and run the public schools without further iniquitous taxation of lands, homes, and industries—"a consummation devoutly to be wished." Fanned by the iodized breezes of the gulf, there is no extreme of climate, in summer averaging 80 degrees, rarely above 95 degrees Fahrenheit, seldom below 32 degrees in the winter, and then only for a few days, a variation of 5 to 10 degrees between noon and midnight, rainfall 50 inches, cooler in summer, warmer in winter than any other part of the gulf coast, in the same latitude.

Its greatest asset, an extraordinary immunity from gulf hurricanes, tornadoes, and cyclones, the reason assigned: that a branch of the Gulf Stream parallels the coast line reaching its northern approach to land at mouth of Calcasieu Pass, supplemented by a chain of fresh water lakes from five to forty miles inland. To the north, stretching to the foothills of the Ozarks are vast forests of long-leaf and other pines, oak, gum, hickory, magnolia, pecan, elm, walnut, and other hard woods; so, when the blustering, blinding breezes, and biting, blistering, bitter blizzards of old Boreas start on a rampage, they split on the Ozark wedge, the right flank tearing through Oklahoma and Texas on the wings of the dreaded norther, the left wing hurtling through the funnel of the Mississippi Valley, leaving the Attakapas in the trough, warmer in winter than any part of the United States and cooler in summer than any part under an altitude of 2000 feet, California and Florida possibly excepted. On the hottest days, it is pleasant in the shade, always when the gulf breeze blows; in the dog days of summer a cool

night's rest can be obtained in a southern exposure, even alongside a nagging wife. The population is composed mainly of the descendants of the Acadians, brutally expelled by the British from Grand Pre, N. S., in the eighteenth century, with Spanish, Canadian, Canary Island, Cape Verde, San Domingo, Martinique, and continental French infused under Spanish and French regimes, together with a strong Celto-Germanic strain, that came in with the American occupation in 1803; the resultant product is a sturdy, hospitable, law-abiding, God-fearing race, industrious in peace and veritable devil dogs in war, that finds its highest development in its beautiful women, who have ever excited the admiration of poets, painters and statesman like Charles S. Parnell, who declared that the women of the Attakapas were the most graceful riders and dancers in the world—this, of course, before the auto-flapper age.

The medico, or any lesser mortal, traversing this area at eventide, when the shadows lengthen and the lights begin to glow, may be refreshed by the sight of some fair daughter of Evangeline at a latticed window, inhaling the gulf breeze or in pious meditation, or perhaps chewing the cud of sweet reflection or gum, as she recites the litany of love; in such event, he would be less than human (married or not), if he failed to paraphrase Cyrano in his impassioned rhapsodies to the fair Roan, or the amorous apostrophies of Romeo to the lovely daughter of the Capulets:

"But soft!

What light through yonder window breaks:
It is the East and Evangeline is the Sun!
Arise, fair sun, and kill the envious moon
Who is already sick and pale with grief
That thou, her maid, art fair more fair
than she.

See how she leans her cheek upon her
hand.

Oh! that I were a glove upon that hand
That I might touch that cheek.

Or even a *Culex Solicitans*, or a plebian
fatigans,
That I might browse upon that cheek;
Or sip the nectar from those ruby lips.
Why even an anchorite in whom the *ignis*
in ossa was extinct
Would perforce sit up and take notice.
'For ne'er did Grecian chisel trace
A finer form or lovlier face
Than the Lady of the Attakapas Lakes.' "

In sum: Everything is found in the Attakapas requisite and necessary for wealth, health, prosperity and happiness of a people.

If some sudden cataclysm were to wipe out every vestige of vegetation and civilization, leaving the Attakapas as bare as a fashion flapper, and an analysis made of the soil and the meteorologic records for a decade published and the land thrown open to pre-emption, there would be such a rush of home-seekers beggaring the exodus of the Hebrews to the Promised Land, or the tide of gold-seekers to California, Yukon, and the diamond fields of Africa. For

"Beautiful the land with its prairies and
forests of fruit trees
Under the feet a garden of flowers and
the bluest of heavens
Bending above and resting its dome on
the walls of the forest,
They who dwell there have named it the
Eden of Louisiana."

An Eden with never an adder of discontent to strike at the human heart; with never a serpent of Intolerance to wind its slimy coils around the mind and conscience, every man voting his convictions and worshipping his God according to his conscience, without let or hindrance, cavalier by tradition and custom, untainted by the praise-God bare bones hypocrisy of the Round Head.

In all ages and climes the alluvial as contra-distinguished from the barren hill country and desert, was ever the richest, with a higher civilization, broader culture

and greater dynamic force, coupled, alas! with those sinister forces that break down the mortal fibre, mainly as a result of urban concentration, "Where wealth accumulates and men decay." As in ancient Greece, Rome, Persia, China, Hindoostan, Sumeria, Egypt, Assyria, Chaldea, Babylonia, and other Messopotamian Empires. The Attakapas, like the rest of the old South, in despite of its wealth and luxury escaped the contagion, mainly by reason of its youth and ruralism, living closer to Nature and Nature's God. In such an atmosphere and environment, it is easy to understand there grew up a body of robust, self-reliant, independent, medical men, who early exhibited a high order of talent and a profound knowledge of the science and art of medicine, as far as it had then progressed, men like Blanchet (uncle of Homer Dupuy), McGuire, Cook, Tarleton, Campbell, Cunningham, Mudd, Sanders, Leslie, Hopkins, Trahan, Solange, Duperier, Betourney, Thomas, Estorge, Littell, Gates, Young, Tolson, Girard, Tilly, Lynch, Mamboulet, Hunter, Francez, Sabatier, Carsten, King, Smiths and a host of others, many like Souchon and Pratt developed in other fields, the majority classically educated in American and foreign universities; all well read not only in the current medical literature, but in the medical classics; 'twas a feast of reason to hear Blanchet speak of French classics, Trousseau at his finger's tips, and McGuire and T. A. Cook discussing the identity of all forms of ancient and primitive medicine, Sumerian, Egyptian, Greco-Roman, tracing the slow evolution from the Byzantium, Mohammedan and Jewish periods to the mediaeval night of all science and its awakening in the dawn of the Renaissance (1453-1600 A. D.) on to the age of individual scientific effort in the seventeenth century to the age of theories and system in the eighteenth century, together with the organized advancement of medicine in the nineteenth century, anticipating the general recognition of preventive medicine in the present century. They

all had the oath and aphorisms of Hippocrates, not only in their heads but in their hearts, their ethical standards were higher than prevail today, never a taint of commercialism. They were the first to realize the necessity of medical organization in Louisiana and founded in the Attakapas Medical Society in 1846, the oldest medical body in the State. They were the first to endorse the principle that the highest duty of the physician is prevention, hence the necessity and duty of educating the people in the cause, nature and prevention of contagious and infectious diseases in man and domestic animals, with special reference to yellow fever and tuberculosis, the intercommunicability of bovine and human tuberculosis long antedating the Tuberculosis International Congress in Washington, D. C., committing the mistake (for want of means) of unanimously passing resolutions to print the salient facts of tuberculosis in several languages for free public distribution, and then failing to do so, a fault later committed by this body without the same excuse. Under their auspices the first illustrated public lecture on hygiene under medical auspices was delivered. Their fee bill established eighty-two years ago still obtains. It is a great pity that the papers and archives of this venerable body have long since disappeared. One of their ex-presidents, Dr. W. W. Lesley of Lafayette Parish, recently, at the age of 85, crossed the Great Divide and joined the silent majority; few are left of the Old Guard.

"Strange, is it not, that of the myriads who
Before us pass the door of darkness thro,

Not one returns to tell us of the road
Which, to discover, we must travel, too?"

"The Moving Finger writes, and having writ
writ

Moves on. Nor all your piety and wit

Can lure it back to cancel half a line,
Nor all our tears, wash out a word of it."

Mr. President, in memory of the old Attakapas Medical Society, the Louisiana State Medical Society at its golden anni-

versary, under your able administration, is presented with this gavel, made from the wood of the Evangeline oak, garnered by the President of the Evangeline Park Association, and this sounding block of oak from the groves that furnished the skeletons of the Constitution and other fighting frigates of the Navy, both fashioned by Louis Gossclin, of Opelousas, a distant relative of Evangeline. May its resounding taps ever find a responsive echo in the heart of every medical man, in this Society's calls to order in its efforts to lift medicine to a still higher ethical and scientific plane; and may this relic be ever a reminder of the pioneer work of the Attakapas Medical Society in medical organization and public instruction in hygiene and State Medicine—"Lest we forget, lest we forget."

THE INFLUENCE OF PLAQUEMINES PARISH ON EARLY ORGANIZED MEDICINE IN LOUISIANA.*

H. E. BERNADAS, M. D.,

NEW ORLEANS.

"And a little child shall lead them."

I would like very much to assure the two stout gentlemen, who have eased themselves down in their chairs preparatory to church sleep, "And a little child shall lead them" is not the text of a sermon.

It is a quotation—a quotation so apt that it was impossible to pass it up. Even at the risk of putting some sermon sleeper to rest.

My colleague, the silver tongue orator from the Attakapas, has so fundamentally impressed his parish claim for recognition, following the cholera epidemic of 1847-48, as the pioneers of organized medicine in

1849, that it seems futile with my limited ability to impress upon you that we are today celebrating the fiftieth anniversary of organized medicine in Louisiana, therefore, that it was organized in 1878-1879, not '49.

As I have prefaced, "And a little child shall lead them."

Plaquemines Parish, population today about 12,000 people, the child, in size, amongst the parishes of Louisiana, led them. It had been organized as a medical society since 1875, passed resolutions in 1876 and 1877 that Parish Medical Societies in Louisiana should be organized as a Louisiana State Medical Society, and forthwith following the 1877 meeting resolutions, a call was issued for the Parish Medical Societies to meet in New Orleans, at the University of Louisiana Medical Department, on Monday, January 24, 1878, for the purpose of organizing a State Medical Society.

The committee appointed by Plaquemines Parish Medical Society for the publicity of this invitation was composed of Drs. J. B. Wilkinson, D. R. Fox, and G. A. B. Hays, three of the most prominent of the older medical practitioners of the Parish. Drs. Fox and Hays later became presidents of the Louisiana State Medical Society.

The Shreveport Medical Society, which had backed the suggestions of the Plaquemines Parish Society in 1877, played a prominent part in the foundation of the Louisiana State Medical Society.

Plaquemines was represented at the convention in 1878 at New Orleans by Drs. D. R. Fox, J. B. Wilkinson, C. P. Wilkinson, W. B. Booth and G. A. B. Hays.

These pioneers of medical organization in Louisiana were hardy men, firm patriots and good doctors. Following an epidemic of yellow fever, they saw the wisdom of organization so as to muster all available medical knowledge in a solid, workable mass, at the disposal of any medical mind.

*Read before the Louisiana State Medical Society, Semicentennial Celebration, New Orleans, April 9, 1929.

One wonders why a desire for medical organization originated in the parishes instead of the City of New Orleans.

In retrospect, it may be that just after the war there had been a great deal of bitter feeling among the physicians of New Orleans, and because of this hostility recourse was frequently had by New Orleans physicians to the "code duello" to settle misunderstandings either fancied or real. This was long before the day when Jack Dempsey and Tex Rickard had popularized the Marquis of Queensbury rules, so realizing that the settling of grievances by the sword or pistol frequently meant the loss of one or two lives, it is probable that the doctors of the country parishes refrained from this costly method of settling their disputes, so as to keep their membership intact, because as you know, it takes more than one person to form an organization.

Well! I will say that it did take more than one person to form an organization. That is—before the days of Volstead. Before Volstead it was impossible for one man to become thoroughly organized all by himself.

I would that I had the beautiful oratory of my friend, Dr. Mayer, that I might lavish praise, not upon the beauty of the Parish of Plaquemines which is scoured and sometimes flooded by the mighty Mississippi for its entire length of 85 miles, but to paint for you the quality of mind and soul of these medical men who trod the soil of Plaquemines Parish and labored among the sick, while striving, yearning and working so that parish medicine might become organized in Louisiana, in one great organized State Medical body.

Because they, my friends, were the children of "The little child who led them."

A HISTORY OF THE SHREVEPORT MEDICAL SOCIETY.*

F. S. FURMAN, M. D.,

SHREVEPORT, LA.

Shreveport was incorporated in 1837, but the town was merely an outpost at the head of navigation of Red River for many years, and it was not until the decade between 1840 and 1850 that the settlement of Northwest Louisiana became more than a few isolated plantations in widely separated localities.

At about this period, the first body of medical men to meet in North Louisiana met in Shreveport and organized the North Louisiana Medical Society with Dr. Bartholomew Egan of Mt. Lebanon as president. The name of this society was changed to the Shreveport Medical Society and meetings were held at more or less regular intervals until the outbreak of the Civil War, when many of the members entered the Confederate Army.

Upon the close of the Civil War, the Shreveport Medical Society was reorganized, and monthly meetings were held. The regular meetings of the society were interrupted in 1873, when Shreveport suffered from an epidemic of yellow fever that was more devastating to the city than the Civil War had been. Many members of the Society died of the disease but on account of the loss in population, the doctors who survived, appear to have been sufficient for the needs of the community for there were no accessions to the Society till after 1880.

After the cessation of the yellow fever epidemic of 1873, the Medical Society began to meet again regularly and has continued to do so up to the present time. Books of minutes and a history of the Shreveport Medical Society were compiled by Dr. J. E. Griffen about 1890. Unfortunately these

*Read before the Louisiana State Medical Society, Semi-centennial Celebration, New Orleans, April 9, 1929.

books have been lost, so that I have relied for my data on memory.

This history showed that from the beginning, the Shreveport Medical Society took an active and leading part in all matters pertaining to the welfare of the community and inaugurated or advanced all legislative matters pertaining to better sanitation. Together with the other medical societies of the state, the Shreveport Medical Society was active in having a law passed creating a State Board of Medical Examiners and a State Board of Health.

During one of the early epidemics of yellow fever when Shreveport was still a frontier town, a prostitute converted her house into an emergency hospital and became for the time being a nurse. This was the first hospital in Shreveport a few years later, the State established the Shreveport Charity Hospital.

In 1889, when I was an interne in this hospital, it was housed in a frame house having four large rooms and a kitchen, one bedroom for the internes, one an operating room, a room for white women patients and one for negro women. There were two log houses, one for negro men and one for white men. The nursing was done by a negro man and one woman assisted by the convalescing patients. Dr. D. M. Clay was surgeon in charge. There was no visiting staff, but the doctors of the town frequently came out with the visiting surgeon.

An excellent custom, which I regret to say has fallen into disuse, was that of serving a toddy to the visiting surgeons upon their arrival and another before they left.

The Doctors Allen had an infirmary in an old log house in the city, these were the only hospitals in Shreveport prior to 1890.

Perhaps the most eminent figure in the Shreveport Medical Society in the early days was Dr. J. C. Egan. He was born in Virginia and moved to Louisiana some years before the Civil War. Dr. Egan probably performed the first laparotomy in

North Louisiana when he operated for extra uterine pregnancy, immediately before or after the Civil War. He entered the service of the Confederate Army at the outbreak of the Civil War and was in command of the hospitals of the Trans-Mississippi Department. Upon the close of the war, Dr. Egan returned to Mt. Lebanon. During the reconstruction period he served in the legislature. The late Col. D. F. Boyd, for many years president of the Louisiana State University, said that it was due to Dr. Egan's initiative and management that negroes were kept out of the University at this time and a separate school was established for them.

When a white government was finally established and his services no longer needed, Dr. Egan retired from politics and removed to Shreveport where he became very active in the practice of medicine and all matters pertaining to public health. He was a member of the first Board of Medical Examiners and resigned from that to become a member of the State Board of Health.

One of the most conspicuous services that he rendered to his city as well as his last, was his service in inaugurating a campaign to rid the city of mosquitoes. Although nearly 90 years of age, Dr. Egan accepted the theory of transmission of yellow fever by the mosquito. In 1905, there were many cases of yellow fever brought to Shreveport from nearby towns and were treated in an emergency hospital especially prepared for the treatment of these cases. This hospital was under the management of Dr. G. C. Chandler. There was no spread of the disease in the city, owing to the efficiency of the mosquito campaign.

Dr. Egan retired from practice in 1905 and died a few years later. The society has continued to flourish during this century and upon this country entering the world war furnished a generous quota of its members to the medical corps of the army and navy.

THE UNITED STATES PUBLIC
HEALTH SERVICE IN THE
STATE OF LOUISIANA.*

WILLIAM COLBY RUCKER, M. D.†

NEW ORLEANS.

When one starts to talk about history, it is a good deal like the road to Lafitte. A traveller, fearing that he lose his way, stopped at a wayside cottage and asked if the road which he was on would take him to Lafitte. The cottager replied: "M'sieu, zat road she take you anywhere, Washington, Philadelphia, New York, Boston, San Francisco, Denver." When one starts to follow the road of history, it will take him almost any place.

On an occasion like this when your Society is celebrating its semi-centennial—fifty years of golden service to the people of this State and humanity at large—it is pleasant to view in retrospect the road which we have travelled together and to imagine the beauties of the way which lies before us.

For one hundred and twenty-five years, lacking a few days, the United States Public Health Service has worked in the State of Louisiana. It has been the companion of this Society throughout its entire existence. Shoulder to shoulder with its brave citizens, it has fought "the jaundiced handmaiden of the Antilles." When plague, when cholera, when smallpox threatened the life and commercial prosperity of this State, it has worked in cooperation with you. It has treated the sick and bound up the injured. It has excluded disease; it has taken over the care, treatment and study of leprosy and when the turbulent Mississippi devastated your rich lands, it has turned disaster into triumph by the establishment of rural health units which will bring to this State lasting prosperity, happiness and length of days. Out of this prolonged and intimate association, there has

grown a deep and abiding mutual respect and friendship and when an officer of the Public Health Service is ordered to Louisiana, he feels that he is coming home.

But there is a deeper tie of kinship between us, since the founder of the Service was an adopted son of Louisiana and one of her most distinguished citizens. Edward Livingston, then a Representative from New York, introduced and guided through Congress the bill which, on July 16, 1798, created the Marine Hospital Service. As the result of financial disaster, Edward Livingston, destined to become one of America's greatest jurists, a Senator, a Secretary of State and finally an ambassador to France, moved to New Orleans just about one hundred and twenty-five years ago. Three years previously, Mr. Evan Jones, a native of Philadelphia but then a Spanish subject living in New Orleans, petitioned the American Secretary of State, urging the erection of the U. S. Marine Hospital at this Port, pointing out that large numbers of American seamen died here yearly on account of the insufficient accommodations of the Spanish Poor Hospital. So effective was his letter that on May 5, 1802, Congress appropriated \$3,000 and authorized the President, with the assent of the Government having jurisdiction, to provide the means necessary for the relief of sick and disabled seamen of the United States at the Port of New Orleans.

In May, 1804, Dr. William Barnwell of Philadelphia came to New Orleans with the equipment necessary for a hospital, rented a building which he fitted up and began his work. During the two years which elapsed between the passage of the Act and his arrival, beneficiaries were treated at Charity Hospital. It is impossible, on account of the limitations of time, to give in detail what happened subsequently. Suffice it to say, that the story is one of constant endeavor against many odds, of the high ideals which have ever characterized the profession of medicine, and running

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†Surgeon, United States Public Health Service.

through the fabric of the tale, there are the bright and pleasing threads of romance.

Dr. Blanquet took over Dr. Barnwell's duties in 1807. In 1809 the makeshift hospital was vacated and for the next forty years patients were treated at Charity Hospital. It is not quite certain from the records available just how long Dr. Blanquet served but in 1831 Dr. John McFarland was in charge and in 1841 Dr. James Ritchie took over the work. In 1837 Congress appropriated \$70,000 for the erection of a hospital in New Orleans. This was completed at a cost of \$122,772 and occupied in 1849. This hospital was located at McDonough on a lot 350 feet square and had 269 beds. It was continuously occupied until February, 1861, and in December of that year was almost completely destroyed by the explosion of a great store of Confederate gunpowder. In 1866 the property was sold for \$300.00 which does not appear to have reached the United States Treasury. In 1843 Dr. C. A. Lutzenburg, one of the first teachers in the Medical College of Louisiana, replaced Dr. Ritchie. Five years later Dr. John I. Ker was in charge. He was succeeded by Dr. P. B. McKelvay who, in turn, was replaced by Dr. Hammond Mercier in 1853. Dr. Mercier only served from April to September when Dr. Howard Smith took charge and so remained until 1858, when Dr. Ker again took the office and held it until February 28, 1861, when the hospital was closed. An old record book contains an entry for that day: "So endeth the old Marine Hospital. Peace to her ashes."

It had long been apparent that the hospital at McDonough was in danger of being engulfed by the Mississippi River and in 1855 a new site was purchased. This was the plot of ground now occupied by the Parish prison, at that time, a most insalubrious location, but upon which an enormous monstrosity of cast iron was erected at a cost of more than \$500,000. It was never occupied by the Service as a hospital. It was used by Confederate troops, by Butler's soldiers, as a Freedman's Hospital, as

a Parish Insane Asylum, as a House of Refuge and as a habitation of negro squatters. Repeated attempts were made to sell it to the City but the succession of mayors repeated the familiar formula that the City had no funds. In 1877 a junk dealer offered \$30,000 for the buildings and grounds. In 1896 the City bought it for \$25,000.

Up to 1870, the Marine Hospital Service, of which the Public Health Service is the heir-at-law, was a national organization operating as a series of districts. It had no mobility and little cohesiveness as a federal body. However, some of the best medical men our country has ever seen were connected with it. In 1870 it became evident that it must assume a more truly national character and after the passage of appropriate laws, it was re-organized by the first Surgeon General, John M. Woodworth. The men who succeeded him, Hamilton, Wyman, Blue and Cumming, have added to its usefulness and Congress has increased its functions from year to year until at present it is an organization which touches with its beneficent finger every nook and corner of our land.

The first officer to be stationed in New Orleans under the new regime was Surgeon E. Hebersmith, who served here from 1870 to 1874 when Surgeon Orasmus Smith took charge. In 1875 Surgeon John Vansant relieved him. It was during the smallpox epidemic of 1877 that the Service did its first epidemic work in this State. During the yellow fever epidemic of 1878 Surgeon R. D. Murray, who was then in charge, played a most important role. From 1870 to July 1, 1882, wards were rented at Hotel Dieu; from 1882 until April 21, 1885, when the new hospital was occupied, wards were rented in Touro Infirmary. As early as 1877 it was evident that a Marine Hospital was necessary but a Congressional appropriation was not obtained until 1882. A site was acquired in March, 1883; work began on the new station in January, 1884, and was completed on April 7, 1885. This hospital occupied the site on which the present hospital is located and consisted of

an administration building, two wards, three sets of quarters, a mess hall and a number of dilapidated slave cabins which are still in use. Judged by modern standards, it could not have been a very pleasant station at that time. The grounds were badly drained; the wards had no other heating arrangements than open grates; drinking water was obtained from cisterns; sewage was drained into cesspools and then pumped across the levee into the Mississippi River. For years the personnel and patients contracted malaria there; the roads leading to the reservation were impassible in weather; aside from the remains of an orange grove, there were no trees; the reservation was surrounded by a palisade of pine slabs, driven into the ground without supporting posts. This crude fence blew down with every heavy storm and patients who desired to absent themselves without formality kicked down a slab or two and walked out. But a succession of Commanding Officers devoted themselves to improvement. A beautiful brick wall and wrought iron fence enclosed the property, electricity replaced the kerosene lamps, new wards were added, adequate heating apparatus was installed and water and gas piped to the reservation. There was an "operation" room in the executive building; a sterilizer for dressings and instruments occupied part of the hall. Gasoline furnished the heat but following an explosion, kerosene was substituted. It is unfortunate that time does not permit the recitation of what each Commanding Officer did. All that can be done is to mention their names. Hebersmith, Orasmus Smith, Vansant, Keyes, Murray, Hutton, Austin, Armstrong, Godfrey, Carter, Goldsborough, Gassaway, Sawtell, Wertenbaker, A. C. Smith, J. H. White, Liddell, Van Ezdorf, Corput, Ebersole, Williams, H. F. White, Rucker.

Many men afterward to become famous served here as junior officers, Henry R. Carter, the discoverer of the extrinsic period of yellow fever; John Guiteras, the first Minister of Health of new-freed

Cuba; M. J. Rosenau, Dean of the Harvard University School of Public Health, and many more. Of the internes who served, mention can be made only of three.

On August 31, 1891, the official record states: "Interne John J. Archinard resigned. Mr. Archinard has been a very useful and unusually industrious interne. His ready usefulness, ability and invariable good humor are much appreciated. He would occasionally forget or overlook some duty but not more so than other younger (or older) men may be expected to do."

On April 30, 1893, there is this entry: "Interne Joseph T. Scott, Jr., resigned this date. Began service September 13, 1891, a very useful, hard working and excellent young man."

The other interne to be noted is J. F. Groenevelt, who was later to die of yellow fever contracted in line of duty. He was not the only one to so lose his life, Interne Thomas Barnard having died of the disease on October 18, 1858.

Early in the '70s a relief station of the Service was established at Shreveport, La. It continued for more than twenty years under the direction of a succession of most excellent local physicians.

In 1870 Congress officially recognized the fact that the exclusion of disease from abroad was a proper function of the federal government. On account of certain constitutional difficulties, however, this could not be done until each of the States had voluntarily ceded its quarantine rights to the general government. Louisiana operated her own quarantines until April 1, 1907, when the heroic von Ezdorf took charge of the Quarantine at the mouth of the river. His successors were Corput, Fountleroy, Faget, Williams, Turnipseed and Eskey.

For many years leprosy constituted an increasingly difficult interstate problem and in 1917 Congress recognized the duty of the general government in the care, treatment and future investigation of the disease. In 1921 the Louisiana Leper Home at Carville was purchased from the State and under

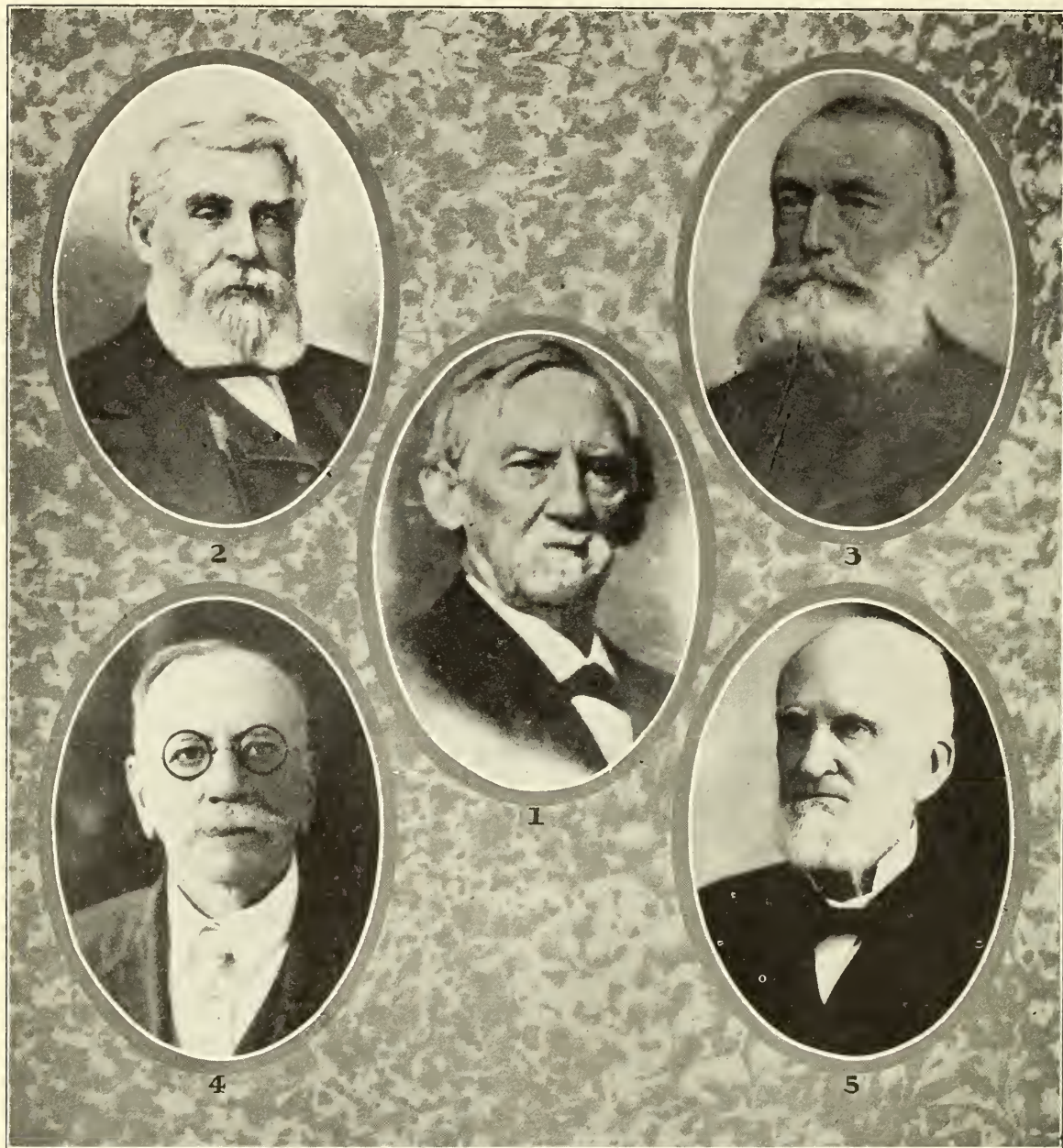
the command of Surgeon O. E. Denney, has expanded and is at present a model of its kind, bringing relief to hundreds of sufferers and holding out the hope that eventually this mutilating monster may be banished from our soil.

The prevention of the interstate spread of disease became a function of the general government in 1893 and when in 1905 yellow fever made its appearance in this City, Louisiana asked the cooperation of the federal Health Service in its extermination. Little need there is to tell you the story of that victorious campaign which was conducted under the able leadership of that veteran foe of pestilence, Surgeon J. H. White. A campaign in which Bacon, Eustis, Leckert, Maes, the lamented Moss, Gessner, and many others enlisted under the yellow banner of our corps unselfishly sacrificing their personal interests to the public weal. It is enough to say that the State, the City and the Nation conjointly stamped out the pestilence before the beginning of frost and forever banished yellow fever from the United States. Similarly, when bubonic plague made its appearance in 1914, the cooperative efforts of the national and local Governments with the whole-hearted support of the citizenry snuffed out the pestilence which walketh in darkness and striketh at noon-day, rat-proofed New Orleans at the expense of millions of dollars, thereby insuring that never again shall the black tants and paralyze its industry.

For many years the Public Health Service has worked hand in hand with the State and Parish health authorities in the extension of rural health service to the country dwellers in this State. Stimulated by the terrible conditions succeeding upon the flood of 1927, the State Board of Health and Surgeon C. V. Akin have so pushed this work that eventually there will not be a parish in this broad and fertile State which does not throw about its people those safeguards which promote health, increase usefulness, induce prosperity and lengthen life. Coin-

cident with the growth of the nation and the advances in curative and preventative medicine, the Public Hospital Service has grown in a way all of its operations in function and usefulness and both at home and abroad benefits Louisiana. Thus, the pellagra work of Lavinder and Goldberger, the tularemia researches of Francis, the trachoma demonstrations of McMullen, the conquest of typhoid by Lumsden, the endemic typhus studies of Maxcy, the goiter surveys of Olsen, and a myriad of other works have all reacted to the welfare of this State. Every time a disease-bearing ship receives treatment in an American port, every time an immigrant is examined by a Public Health official in Europe, every study at the Hygienic Laboratory, every effort to prevent and cure drug addiction, every rural health demonstration, malaria control measure, cancer study, industrial hygiene investigation, every one of the multitudinous things which the Public Health service does daily in the protection and promotion of the national health protects and promotes the health of Louisiana.

So much for the past; what of the future? That it looks bright no one can gainsay; the archaic Marine Hospital is being replaced by a modern structure; a new Quarantine Station is to be built at New Orleans; the National Leper Home is growing daily in size and usefulness; the rural inhabitant of the State receives increasing health protection. That the same happy relationship between the Federal Health Service, the people of Louisiana and its medical profession will continue, there can be no doubt. Our taproots are so intermingled in the soil of tradition and pleasant memory that they can never be torn out, and just as this Society looks forward to a bright future of ever-growing usefulness to the people of Louisiana, so does the Public Health Service envision a future strengthening of those generous ties of friendship which bind us indissolubly together and an expansion of the ways in which the guardian of the Nation's health may upbuild yours.



Group of distinguished founders and organizers of the Louisiana State Medical Society whose services were commemorated at the semi-centennial celebration held in New Orleans on April 9-11, 1929.

(1) Dr. Stanford E. Chaillé, of Orleans. Chairman of the Committee on Organization and Legislation of the Louisiana State Medical Society during the first ten years of its existence.

The main spring and "father" of the organization.

(2) Dr. Samuel M. Bemiss, of Orleans. Chairman of the preliminary convention of 1878 and acting President of the first regular session of the Society in 1879.

(3) Dr. T. G. Richardson, of Orleans. President of the American Medical Association (1878) and Chairman of the Committee of Arrangements for the State Medical Convention of 1878. A leading spirit in creating the State Society as a unit of the National Association.

(4) Dr. Ernest S. Lewis, of Orleans. Honorary Fellow and only living Signer of the Convention of 1878.

(5) Dr. Janes C. Egan. Delegate from the Shreveport Medical Society and the first President of the Louisiana State Medical Society (1879).

Roll of Honor in commemoration of the eighty members of the medical profession who assembled in the Preliminary Convention held in the Medical Department of the University of Louisiana at New Orleans, on January 14, 1878, to organize the Louisiana State Medical Society.

THE LIST OF DELEGATES WHO ASSEMBLED FROM ORLEANS AND THE COUNTRY PARISHES AT THE CONVENTION OF JANUARY 14, 1878, IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISIANA TO ORGANIZE THE LOUISIANA STATE MEDICAL SOCIETY.

ASCENSION.—Dr. E. R. Connell.

BOSSIER.—Drs. J. T. Davis, N. T. Dillard, Thomas J. Vance.

CADDO.—Drs. W. T. Whitworth, John J. Scott, W. Hilliard, W. W. Ashton, R. A. Gray, Thomas J. Allen, A. A. Lyon, J. C. Egan, A. R. Booth, T. G. Ford, D. M. Clay.

CARROLL.—Dr. J. L. Davis.

DE SOTO.—Dr. W. S. Frierson.

EAST BATON ROUGE.—Drs. J. W. Dupree, A. B. Williams.

EAST FELICIANA.—Drs. O. P. Langworthy, L. G. Perkins.

IBERIA.—Dr. G. P. Minvielle.

IBERVILLE.—Drs. J. Larcade, A. B. Snell, P. S. Postell.

MOREHOUSE.—Dr. J. D. Hammond.

NATCHITOCHES.—Dr. S. O. Scruggs.

ORLEANS.—Drs. S. M. Bemiss, Samuel Logan, C. J. Bickham, M. E. Schlater, Joseph Holt, W. P. Brewer, A. B. Miles, Henry Bezou, J. C. Carter, T. G. Richardson, S. E. Chaille, George K. Pratt, Howard Smith, E. S. Drew, H. D. Schmidt, A. Chastant, A. G. Friedrichs, M. Schuppert, A. R. Gourrier, J. C. Beard, L. F. Salomon, S. L. Henry, E. T. Shepard, J. J. Lyons, Joseph Jones, C. H. Tebault, E. S. Lewis, J. A. G. Fisher, H. A. Veazie, J. P. Lehde, J. M. Watkins, P. C. Boyer, F. B. Gaudet, Samuel Choppin, J. P. Davidson, Thomas Layton, W. G. Austin, L. A. d'Estampes, S. S. Herrick, W. S. Mitchell, J. C. Faget, C. Faget, E. Loeber, J. B. Davis, H. Steinau.

OUACHITA.—Dr. W. Sendel.

PLAQUEMINE.—Drs. D. R. Fox, J. B. Wilkinson, C. P. Wilkinson, W. B. Booth, G. A. B. Hays.

ST. MARY.—Dr. C. W. Smith.

REMARKS IN PRESENTING A STERE-
OPTICON EXHIBIT OF THE POR-
TRAITS OF THE FOUNDERS
AND PRESIDENTS OF THE
LOUISIANA STATE MED-
ICAL SOCIETY.*

RUDOLPH MATAS, M. D.†

NEW ORLEANS.

In considering the historical aspects of this celebration as these have been presented by the distinguished speakers who have preceded me, it seemed fitting that on this auspicious occasion I should supplement the commemorative addresses that you have just heard by a tribute to the memory of the founders and to the distinguished men who, in the succession of the past fifty years, have held the reins of the presidential office in this society. It is proper that the men of the present and the coming generation in our organization should not only learn to give a proper valuation to the services rendered by the presidents and their accomplishments but with their personalities as visualized in their portraits. To the historian of social, professional, political and other groups which enter into the composition of every organized society, a biographic study of its leaders in the progressive evolution or involution of each group, affords some insight, not merely into the type of the men chosen by the group to execute their will and to represent their interests, tendencies and activities, but it also suggests the motives and tendencies of the group or collectivity in determining its choice of leaders. The Louisiana State Medical Society is a medico-social institution, and, as such, is no exception to the rule that the complexion of an organization, its developmental status and the influences that dominate its government in the different periods of its existence, is reflected in the

type and character of the men whom the electors select as their executive representatives. For this reason a biographic study of the presidents of the Louisiana State Medical Society is of interest and importance in connection with the chronological record of its proceedings and transactions, as a guide to the policies and objectives that prompt the electors in their selections and also in estimating the achievements accomplished by the elect, during their term of office. It would be interesting and no doubt profitable to survey the progress of this society during the semi-centenary of its existence viewed in the light of the data furnished by the annual messages of its forty-eight presidents. But this review, illuminating and instructive as it might be to the members interested in the history of the society, would be out of place on this public occasion and at this hour when it would be an unpardonable abuse of your indulgence if I were to subject you to a recital that you can read more leisurely in print when the semi-centennial history of the state society is published.

I will therefore confine myself to a rapid presentation of the portraits of the founders of this society and those of the forty-eight presidents who in succession have been elected to this office from Dr. James C. Egan, the first president elected at the organizing convention of 1878 to Dr. Frank T. Gouaux of Lockport, the president elect for 1929-1930.

This is the first time that a complete portrait gallery of the founders and the presidents of this society has been assembled and exhibited. It is a task that I have assumed as a duty in connection with the history of the first semi-centennial of its existence which the Society has entrusted to me. Though it would seem a comparatively easy task to gather and assemble the portraits of the men who have flourished in so recent a period as that embraced by the past fifty years, and particularly of men of sufficient distinction to

*Read before the Louisiana State Medical Society, Semi-Centennial Celebration, New Orleans, April 9, 1929.

†Chairman of the Committee on History, Louisiana State Medical Society.

have been elected to the presidency of a representative State organization,—I have had far greater difficulties in obtaining them than I had ever anticipated when I first approached this enterprise. In fact, the acquisition of some of these portraits has entailed an amount of correspondence and research among relatives and friends, as well as old journals and newspapers, that is scarcely conceivable in this era of universal photography and omnivorous portraiture,—an age when it is almost impossible for any one to peep through the windows of publicity without finding himself instantly transformed into a target for the ubiquitous reporter and his camera. However, the difficulties which I have encountered in obtaining some of the older photographs and prints have only served to emphasize the need and importance of the quest; for I am quite sure that in many instances, a delay of this research for another decade would have been fatal to the success of the undertaking. In this connection I need scarcely emphasize the importance of portraiture as a part and parcel of biography. In spite of the fallacies that underlie the interpretations of the physiognomy, we judge of age, of health and disease, of race, of character, and of the esthetic, ethical and intellectual attributes of the individual by the outward characteristics stamped upon the lineaments of the face. In spite of all its deceptions and disguises, humanity still clings to the belief in the "*vultus ac frons animi janua*",—the face and the brow are the gateway to the mind,—and instinctively looks to the countenance as "the mirror of the soul". Right or wrong, this universal belief accounts for the human interest and insatiable curiosity that attaches to portraiture as an external, objective, visualization of the personalities whom we have come to know only through repute or the record of

accomplishment, and, as in the case of our presidents, when their portraits are considered and scanned, in relation to their life activities and personal characteristics.

But apart from all these somewhat digressive considerations it is more to the point to say that this exhibit of the portraits of the founders and presidents of the Louisiana State Medical Society has been prompted by the three fold desire: (1) to assemble and preserve the portraits of the men whom this society has honored with its trust and confidence as its chief executives and who, in many instances, have given distinction to this office by their eminence and prestige; (2) to resurrect the portraits of a number of worthy and estimable men from unmerited oblivion in the lost records and fast vanishing family albums in which they have been buried; (3) to lighten the burden of the future historian of this society by assembling, reproducing and completing a pictorial gallery which was hitherto inaccessible and unavailable for the history of this society during the struggling and most difficult period of its existence.

In endeavoring to accomplish this purpose, the pleasure that I have derived from the task has fully compensated for the labor, time and expense involved in this compilation and arduous quest.¹

(Following these remarks the portraits were projected on the screen in the following order, with such brief comments as the limitations of the program would permit).

¹ These remarks apply with even greater force to the collection of over 300 portraits of the presidents, secretaries, and delegates of the 29 constituent parish medical societies, including the 36 presidents and the 18 secretaries of the Orleans Parish Medical Society, which have been collected and reproduced in uniform size for the semi-centennial history of the Louisiana State Medical Society as this was exhibited in type-written and advanced, but yet unfinished, form to the House of Delegates on April 9, 1929.

List of The Founders and Presidents of The Louisiana State Medical Society During the First Semi-Centennial of Its Existence, Including Dr. E. S. Lewis, The Only Living Delegate of the Eighty Who Attended the Organizing Convention Held in New Orleans on January 14, 1878.

STANFORD EMERSON CHAILLE (1830-1911): A.M., Harvard; M.D., University of Louisiana, 1853; Dean of the Tulane University of Louisiana, 1895-1908; Demonstrator of Anatomy, 1858-1867; Lecturer on Obstetrics, 1865-6, and Professor of Obstetrics, 1876; Professor of Physiology and Pathological Anatomy, 1867-1908; author of the constitution and by-laws of the Louisiana State Medical Society, 1878-9; chairman of the committee on State Medicine, 1879-1886; chairman of the committee on Judiciary, 1887; annual orator, L.S.M.S. 1879.

SAMUEL MERRIFIELD BEMISS (1821-1884): M. D., Medical Department, University of New York, 1846; Professor of the Practice of Medicine, the University of Louisiana, 1866-1884; temporary chairman of the convention of 1878, establishing the Louisiana State Medical Society; first vice-president, 1879; presiding officer in the absence of President J. C. Egan at the first annual meeting of 1879; chairman of the committee on publication in 1879; chairman of the committee on reports and essays at the convention of 1878.

TOBIAS GIBSON RICHARDSON (1827-1892): M. D., the University of Louisiana, 1848; Professor of Anatomy, 1858-1872; Professor of Surgery, 1872-1889; Dean of the Medical Department of the University of Louisiana, 1865-1885; President of the American Medical Association, 1877; chairman of the committee of arrangements for the anniversary, 1878-9; chairman of the Judiciary committee, 1879; chairman of the committee writing the circular letter which was sent out through the State notifying the profession of the formation of a State Medical Society.

PRESIDENTS

JAMES C. EGAN, Shreveport: (1823-1912); M. D., University of New York, 1846; President in 1879, at the age of 55 years; survived his presidency for 34 years; in general practice, with an interest in public health; health officer for Shreveport and vice president of the Louisiana State Board of Health.

JAMES W. DUPREE, Baton Rouge: (1842-1906); M. D., New Orleans School of Medicine, 1871; President in 1880, at the age of 37 years; survived his presidency for 27 years; in general practice, a naturalist, and authority on the mosquitoes (culicidae) of Louisiana; Professor of Anatomy and Hygiene, Louisiana State University, 1878; Surgeon, Louisiana State University, 1890; yellow fever expert.

C. M. SMITH, Franklin: (1826-1901); M. D., University of Pennsylvania, 1847; President in 1881; at the age of 54 years; survived his presidency for 21 years; in general practice.

A. A. LYON, Shreveport: (1838-1918); M. D., St. Louis Medical College, 1861; President in 1882, at the age of 43 years; survived the presidency for 37 years; in general practice.

JAMES P. DAVIDSON, New Orleans: (1812-1890); M. D., University of Pennsylvania, 1832; President in 1883, at the age of 71 years; survived his presidency for 7 years; in general practice; Yellow Fever Commissioner of Shreveport in 1878; member of the Louisiana State Board of Health; President of the Orleans Parish Medical Society, 1887, 1888, and 1889.

RICHARD H. DAY, Baton Rouge: (1813-1892); M. D., Washington Medical College, 1832; President in 1884, at the age of 71 years; survived his presidency 8 years; in general practice; Professor of Pediatrics, New Orleans Polyclinic.

SAMUEL LOGAN, New Orleans: (1831-1892); M. D., South Carolina University,

1853; President in 1885, at 54 years of age; survived the presidency for 7 years; surgeon and in general practice; Professor of Anatomy and Clinical Surgery, Tulane Medical School, 1872-1892.

D. RAYMOND FOX, Jesuit's Bend, Plaquemines Parish: (1820-1893); M. D., University of Louisiana, 1845; President in 1886, at the age of 66 years; survived the presidency for 7 years; in general practice.

JOSEPH JONES, New Orleans: (1833-1896); M. D., University of Pennsylvania, 1856; President in 1887, at the age of 54 years; survived his presidency for 9 years; in general practice; chemist, sanitarian, archeologist; author, and voluminous contributor to the history and Pathology of the diseases of Louisiana and of the South, Professor of Chemistry, Clinical Medicine and Medical Jurisprudence, Tulane University Medical School, 1860-1896; President of the Louisiana State Board of Health, 1890-1884; Surgeon General of the United Confederate Veterans, 1889-1896.

ISAAC J. NEWTON, JR., Monroe: (1856....); M. D., University of Louisville, 1879; President in 1888, at the age of 32 years; survived the presidency for 41 years; in general practice, surgeon; founder of the Dr. Newton Infirmary and chief of staff of the St. Francis Sanitarium, Monroe; chairman of the committee on Medical Legislation which passed the act creating the present State Board of Medical Examiners, 1895.

C. D. OWENS, Iola, La., (1845-1895); M. D., Charleston Medical College, 1862; President in 1889, at the age of 44 years; survived the presidency for 6 years; in general practice, surgeon.

JOHN B. ELLIOTT, New Orleans: (1841-1921); M. D., South Carolina Medical College, 1867; President in 1890-1891; at the age of 50 years; survived his presidency for 30 years; Professor of Physics and Chemistry, University of the South,

Sewanee, 1869-1885; Professor Materia Medica and Therapeutics, University of Louisiana, 1871-1873; Professor of the Principles and Practice of Medicine, Tulane University, 1874-1908.

ALBERT BALDWIN MILES, New Orleans: (1852-1894); M. D., University of Louisiana, 1875; President in 1894, at the age of 41 years; survived the presidency 1 year; in general practice, surgeon; Demonstrator of Anatomy, Tulane Medical School, 1875-1885; House Surgeon, Charity Hospital, 1882-1894; Professor of Surgery, Tulane Medical School, 1893-1894.

RUDOLPH MATAS, New Orleans: (1860....); M. D., University of Louisiana, 1880; President in 1894-1895; at the age of 36 years; has survived the presidency for 34 years; surgeon; Demonstrator of Anatomy, Tulane Medical School, 1885-1894; Professor of Surgery in that institution, 1894-1927; Emeritus (1927....); Professor of Surgery in the New Orleans Polyclinic, 1888-1896; surgeon in chief, Touro Infirmary, 1905 . . . ; Consulting Surgeon, Charity Hospital, 1927 . . .

ROBERT M. LITTELL, Opelousas: (1861-1927); M. D., University of Louisiana, 1884; President in 1895, at the age of 34 years; but resigned immediately after his election; survived the election to office for 32 years; in general practice; coroner of Opelousas 1886-1895, 1898-1926.

PAUL E. ARCHINARD, New Orleans: (1895-1912); M. D., University of Louisiana, 1882; President in 1895-96, 1896-97; at 36 years of age; survived his presidency for 17 years; bacteriologist, neurologist, and pathologist; Demonstrator of Bacteriology and Histology, Tulane Medical School, 1889-1904; Professor of Nervous Diseases, in the same institution and in the New Orleans Polyclinic, 1898-1912.

GEORGE A. B. HAYS, Plaquemines Parish: (1848-1919); M. D., University of Louisiana, 1874; President in 1898; at the age of 50 years; survived his presidency

for 21 years; psychiatrist; Superintendent of the Louisiana State Insane Hospital, Jackson, 1897-1905; Superintendent, State Hospital for the Insane, Pineville, 1905-1909.

WHYTE GLENDOWER OWEN, Whitecastle, La.; (1859); M. D., University of Louisiana, 1880; President in 1899, at the age of 40 years; has survived the presidency for 30 years; in general practice, Surgeon General Louisiana National Guard, 1904-1912.

FREDERICK W. PARHAM, New Orleans: (1856-1927); M. D., University of Louisiana, 1879; President in 1900, at the age of 44 years; survived his presidency for 27 years; surgeon; Professor of Surgery at the New Orleans Polyclinic and at the Tulane Medical School (Graduate), except in 1905-1914 and 1925-1927, when he served as Chairman Medical Committee on the Board of Administrators of Tulane University; President Orleans Parish Medical Society, 1895; Chairman First Advisory Committee, Charity Hospital, 1914-1918.

THOMAS E. SCHUMPERT, Shreveport: (1863-1908); M. D., Louisville Medical College, 1885; President in 1901, at 38 years of age; survived his presidency for 7 years; chief surgeon, Shreveport Charity Hospital and founder of the T. E. Schumpert Memorial Hospital, Shreveport.

ISADORE DYER, New Orleans: (1863-1920); M. D., Tulane University, 1889; President in 1902, at the age of 39 years; survived his presidency for 18 years; specialty, dermatology; Professor of Dermatology in the New Orleans Polyclinic and the Tulane Medical School, 1898-1908; Dean of the Tulane Undergraduate Medical School, 1908-1920.

JAMES M. BARRIER, Delhi: (1860-1922); M. D., Louisville Medical College, 1883; President in 1903, at the age of 43 years; survived his presidency for 19 years; in general practice; successful parish organizer.

CHARLES CHASSAIGNAC, New Orleans: (1862....); M. D., University of Louisiana, 1883; President in 1904, at 42 years of age; has survived his presidency for 25 years; specialty, urology; Professor of Genito-Urinary and Rectal Surgery at the New Orleans Polyclinic and the Tulane Medical School (Graduate), 1898-1905; President of the Polyclinic and Dean of the Tulane Graduate School of Medicine, 1897-1925; Superintendent, Eye, Ear, Nose, and Throat Hospital since 1922.

C. J. DUCOTE, Cottonport: (1849-1909); M. D., University of Louisiana, 1875; President in 1905, at the age of 56 years; survived his presidency for 4 years; in general practice; a zealous parish organizer.

HENRY DICKSON BRUNS, New Orleans: (1859....); M. D., Jefferson Medical College, 1881; President 1906, at 47 years of age; has survived his presidency for 23 years; specialty, ophthalmology; Professor of Disease of the Eye in the New Orleans Polyclinic and the Tulane Medical School (Graduate), 1888-1918; chief surgeon, Eye Department, Eye, Ear, Nose, and Throat Hospital since 1893; Annual Orator Louisiana State Medical Society, 1885.

OSCAR DOWLING, New Orleans: (1866....); M. D., Vanderbilt University, 1888; President in 1907, at the age of 42 years; has survived his presidency for 21 years; sanitarian; visiting surgeon, Eye, Ear, Nose, and Throat Hospital, 1896-1899; Professor of Public Health, Tulane Medical School since 1918; President of the La. State Board of Health, 1910-1928.

E. DENEGRÉ MARTIN, New Orleans: (1863....); M. D., Tulane Medical School, 1891; President in 1908, at the age of 45 years; has survived his presidency for 21 years; Professor of Surgery, New Orleans Polyclinic and Medical School of Tulane University (Graduate), since 1893; Dean of the same, 1925-28.

CHARLES McVEA, Baton Rouge: (1869-1920); M. D., Tulane Medical School, 1893; President in 1909, at the age of 40 years; survived the presidency for 11 years; in general practice; surgeon to the Louisiana State University; first vice-president of the Louisiana Medical Society, 1906.

EDWIN J. GRANER, New Orleans: (1863-1921); M. D., Tulane Medical School, 1897; President in 1910, at 47 years of age; survived his presidency 11 years; in general practice; President of the Orleans Parish Medical Society in 1903.

R. O. SIMMONS, Alexandria: (1868....); M. D., Louisville Medical College, 1892; President in 1911, at the age of 43 years; survived the presidency for 18 years; in general practice; City and Parish health officer, 1898-1905; chairman of the Council, 1910; chairman of the Committee on Medical Defense, 1928.

BENJAMIN A. LEDBETTER, New Orleans: (1868....); M. D., Tulane Medical School, 1892; President in 1912, at the age of 44 years; has survived his presidency 17 years; in general practice; assistant quarantine physician of Louisiana, 1893; President of the Orleans Parish Medical Society, 1910-11; member of the Louisiana State Board of Health, 1908-1920; Chairman Committee on Legislation, Louisiana State Medical Society, (1924....) chief of staff, Charity Hospital, 1914-1929.

FRED J. MAYER, Opelousas: (1859....); M. D., University of Louisiana, 1882; President in 1913, at the age of 54 years; has survived his presidency for 16 years; in general practice; sanitarian; special medical inspector and lecturer of Hygiene, Louisiana State Board of Health, 1906; quarantine officer for Louisiana, 1893-1897; health officer for the State of Mississippi and Texas.

GEORGE SAMUEL BEL, New Orleans: (1872....); M. D., Tulane University Medical School, 1893; President in 1914, at 42

years of age; has survived his presidency for 15 years; specialty, internal medicine; Professor of Clinical Medicine, Tulane Medical School (Graduate), 1912-1924; Professor and head of the Department of Internal Medicine, in the same institution, (undergraduate) 1912-1926.

JAMES C. WILLIS, Shreveport: (1865....); M. D., Vanderbilt University, 1887; President in 1915, at the age of 50 years; has survived his presidency for 14 years; surgeon; chief surgeon of the T. E. Schumpert Hospital, Shreveport, for 20 years; chief surgeon, Charity Hospital of Shreveport, since 1920; and chief surgeon of the Tri-State Hospital, Shreveport, since 1928.

WILLIAM H. SEEMANN, New Orleans: (1878....); M. D., Tulane Medical School, 1900; President in 1916, at 38 years of age; has survived his presidency for 13 years; specialty, bacteriology and preventive medicine; Professor of Bacteriology and Preventive Medicine, Tulane Medical School (Graduate), since 1908; Professor of Hygiene and Preventive Medicine, in Tulane Medical School (Undergraduate), since 1914.

CLARENCE PIERSON, Alexandria: (1868....); M. D., Tulane Medical School, 1894; President in 1917, at the age of 49 years; has survived his presidency for 12 years; psychiatrist; Superintendent of the State Insane Hospital, Jackson, 1905-1920.

WILKES H. KNOLLE, New Orleans: (1870....); M. D. Tulane University Medical School, 1891; President in 1918, at 48 years of age; has survived his presidency for 11 years; in general practice; President of the Orleans Parish Medical Society in 1915 and 1916.

E. LEE HENRY, LeCompte: (1875-1920); M. D., Tulane Medical School, 1897; President in 1919, at the age of 44 years; survived the presidency 1 year; in general practice; successful parish organizer.

HOMER DUPUY, New Orleans: (1871....); M. D. Tulane University Medical

School, 1897; President in 1920 at the age of 49 years; specialty, oto-laryngology; Professor of Oto-laryngology, New Orleans Polyclinic and Tulane University Medical School (Graduate), 1900-1910; senior surgeon in oto-laryngology, Charity Hospital and Hotel Dieu since 1914; Professor of Oral Surgery, Loyola University Dental College since 1914; President Orleans Parish Medical Society, 1912.

JAMES E. KNIGHTON, Shreveport: (1870—); M. D., University of Tennessee, 1899; President in 1921 at 51 years of age; has survived his presidency for 8 years; specialty, internal medicine; chief of the medical service, Charity Hospital, Shreveport, since 1920; now chief of medical service at the Tri-State Hospital, Shreveport.

PAUL J. GELPI, New Orleans: (1874....); M. D., Tulane Medical School, 1896; President in 1922, at the age of 48 years; has survived his presidency for 7 years; specialty, urology; Professor of Genito-Urinary and Rectal Diseases in the New Orleans Polyclinic and the Tulane Medical School (Graduate), 1901-1925; President of the Orleans Parish Medical Society, 1917 and 1918; Chairman of the Council Louisiana State Medical Society, 1918-1921; Chairman Committee Arrangements Semi-Centennial 1929.

LESTER J. WILLIAMS, Baton Rouge: (1880....); M. D., Tulane Medical School, 1904; President in 1923, at the age of 43 years; has survived his office for 6 years; specialty, radiology; chief radiologist, Baton Rouge General Hospital and Our Lady of the Lake Sanitarium.

C. V. UNSWORTH, New Orleans: (1871....); M. D., Tulane Medical School 1904; President in 1924 at the age of 53 years; has survived his presidency for 5 years; specialty, psychiatry; assistant clinical psychiatry, Tulane Medical School, 1919-1926; Superintendent, Louisiana Retreat, New Orleans, since 1912.

E. M. ELLIS, Crowley: (1872-1928); M. D., the University of the South, 1895; President in 1925 at the age of 53 years; survived the presidency for 3 years; in general practice. Successful parish organizer.

S. M. BLACKSHEAR, New Orleans: (1884....); M. D., Tulane Medical School, 1909; President in 1926, at the age of 42 years; has survived his presidency for 3 years; specialty, oto-laryngology; Professor of Clinical Oto-Laryngology, Tulane Medical School, 1911-1929.

ARTHUR A. HEROLD, Shreveport: (1882....); M. D., Tulane Medical School, 1907; President in 1927 at the age of 45 years; has survived his presidency for 2 years; specialty, internal medicine; assistant surgeon and pathologist, Shreveport Charity Hospital, 1908-1912; coroner and health officer of Shreveport, 1912-1926; Superintendent, North Louisiana Sanitarium.

LEON J. MENVILLE, New Orleans: (1883....); M. D., Maryland Medical College, 1904; President in 1928; at the age of 45 years; specialty, radiology and internal medicine; instructor in clinical medicine and radiology, Tulane Medical School, since 1918.

FRANK T. GOUAUX, Lockport: (1883....); M. D., Medico-Chirurgical College, University of Pennsylvania, 1906; President in 1929, at the age of 46 years; in general practice; successful parish organizer.

SYNOPSIS OF STATISTICAL DATA GATHERED FROM THE BIOGRAPHIES OF THE PRESIDENTS OF THE LOUISIANA STATE MEDICAL SOCIETY (1879-1929).

With the ascension of Dr. Leon Menville to the presidency of the Louisiana State Medical Society in April of 1928 (to serve for 1928-1929), and if we include the president-elect, Dr. Frank T. Gouaux, of Lockport, there are now listed forty-

eight president of the organization; twenty-four living and twenty-four dead. At the date of this report, April 9, 1929, Dr. Isaac J. Newton, Jr., of Monroe, is the oldest ex-president at the age of 73 years, and Dr. S. M. Blackshear, of New Orleans, the youngest at the age of 45 years. Dr. Newton was also the youngest president to attain office, at the age of 32 years, and the longest to survive it, with 41 years of post-presidential activity to his credit.

The oldest presidents at the time of their election were Dr. J. P. Davidson, of New Orleans, and Dr. Richard H. Day, of Baton Rouge, both of whom gained this distinction at the age of 71 years. The former survived his office 7 years and the latter 8 years.

Two presidents died in office: Dr. Albert B. Miles, of New Orleans, in 1894, and Dr. E. Lee Henry, of LeCompte, in 1920. One president, Dr. Robert M. Littell, of Opelousas, resigned shortly after his election in 1895.

The average age of survival for the deceased presidents is 15.07 years, and those living, 14.52, or practically 15 years for the dead and 14½ for the living.

There are certain notable exceptions to this average, as, for instance, among the deceased, Dr. James C. Egan, who survived his presidency 34 years; Dr. Robert Littell, 32; Dr. J. W. Dupree, 27; Dr. A. A. Lyon, 37; Dr. C. M. Smith, 21; Dr. J. B. Elliott, 30; Dr. F. W. Parham, 27; Dr. G. A. B. Hays, 21; Dr. J. M. Barrier, 19; Dr. Isidore Dyer, 18; Dr. P. E. Archinard, 17; and Dr. E. M. Ellis, 3 years.

Among the living we are happy to record that Dr. Newton is living 41 years after the expiration of his office. Dr. Matas, the present historian of the Society, has survived his presidency 35 years; Dr. W. G. Owens, 30; Dr. Oscar Dowling, 22; Dr. E. D. Martin, 21; Dr. Charles Chassaignac, 25; Dr. H. Dickson Bruns, 23; Dr. R. O. Simmons, 18; and Dr. B. A. Ledbetter, 17.

The medical specialties of the 48 presidents are represented as follows:

General practice, 21; surgery, 7; internal medicine, 4; sanitation, 3; bacteriology, 2; dermatology, 1; psychiatry, 2; neurology, 1; radiology, 2; oto-laryngology, 2; urology, 2; ophthalmology, 1.

Twenty of the presidents have held professorial positions on the teaching staff of Tulane University Medical School. One was Dean of the Tulane Undergraduate Medical School, 1908-1920, Dr. Isidore Dyer. There were two Deans of the Tulane Graduate School of Medicine: Dr. Charles Chassaignac (1897-1925), and Dr. Denegre Martin (1925-1928).

It is a notable fact that none of the three primal founders, Chaille, Bemiss, and Richardson, ever occupied the presidential chair of the Louisiana State Medical Society.

Two have been presidents of the Louisiana State Board of Health, Dr. Joseph Jones (1880-1884), and Dr. Oscar Dowling (1910-1928).

The presidents represent the parishes in the following order:

Orleans, 23; East Baton Rouge, 5; Caddo, 5; Rapides, 3; Plaquemine, 2; St. Mary, 1; Ouachita, 1; Avoyelles, 2; Richland, 1; Iberville, 1; St. Landry, 2; Acadia, 1; Lafourche, 1.

It is again interesting to note that 27 of the 48 passed presidents are graduates of Tulane Medical School and 21 are from other schools:

Tulane, 27; New Orleans School of Medicine, 1; University of New York, 1; University of Pennsylvania, 3; Medico-Chirurgical College of Philadelphia (now Graduate School of the University of Pennsylvania), 1; St. Louis Medical College, 1; University of Louisville, 1; Louisville Medical College, 3; Charleston Medical College, 1; Medical College of Carolina, 1; South Carolina University, 1; Jefferson Medical College, 1; Washington Medical College, 1; Vanderbilt University, 2; University of Tennessee, 1; University of the South, Sewanee, 1; Maryland Medical College 1. Total 48.

Three of the four primal founders, including Dr. Ernest Lewis, the only liv-

ing delegate to the convention of 1878, are likewise graduates of Tulane Medical School. It is evident, therefore, that Tulane University continues to be the cradle and nursery of the majority of the presidents of this Society and of the leaders of the medical profession in Louisiana.

CLOSING REMARKS.

Before closing with this brief pre-
amble, allow me to pause in reverent
tribute to the memory of the dead, the
majority of whom I knew, some as my
teachers, others in the closer intimacy of
personal friendship. Though I was a stu-
dent at the Medical School, and under-
graduate interne at Charity Hospital in
1879, when this Society was definitely or-
ganized, I had the privilege of attending
the first annual meeting of the Society
when I heard Dr. Stanford E. Chaille de-
liver the first annual oration on State
Medicine and Medical Organization—an ad-
dress which thrilled all who heard it with
the power of his eloquence and the strength
of his logic. It still remains unsurpassed
in the history of this organization as a
superb masterpiece of medical oratory and
the most precious legacy that that great
statesman and leader left as a stirring ap-
peal for united and co-operative effort in
the interest of medical progress in our
State. When I was graduated in 1880 and
joined this Society, now 49 years ago—
and in the years that followed, I became
acquainted with all the presidents, many
of whom have favored me with their per-
sonal friendship. In this way I came to
know the older presidents, many of whom
were my teachers, such as Samuel Logan,
Joseph Jones, John B. Elliott and A. B.
Miles, and also their older contemporaries
from the parishes, such as Dupree and
Day, of Baton Rouge, C. M. Smith, of
Franklin, D. R. Fox and G. A. B. Hays,
of Plaquemine, C. D. Owens, of Rapides,
and J. P. Davidson, of Orleans, just as I
have known in closer relations, their
younger successors, many of whom I have

had the privilege of calling my students
as well as my friends. My recollection of
all the older presidents remains clearly im-
pressed in my memory as I visualize the
clear lineaments of their kindly faces, as
they impressed me in all the freshness and
vividness of my early professional youth.

The large majority of the presidents
were general practitioners, typical repre-
sentatives of that big hearted, trusted and
noble type of doctors—the family doctors
who are so fast and sadly disappearing, not
only in our large cities, but in the rural
districts as well. They have constituted
the backbone of our calling and it is they
who have largely given it the honor and
the prestige that it enjoys as the most
humane and self-sacrificing of the learned
professions. In recalling these salient but
now silent figures of our dead past, I am
reminded that our annual meeting never
fails to teach us at least one lesson. The
Art whose province it is to heal and to
save, cannot protect its own ranks from
the inroads of disease and the waste of the
Destroyer. Twenty-four of my fellow pres-
idents are mute to the roll call of the
Presidential roster. Some were taken
away long ago, others quite recently.
Many, if not the majority, of our earlier
presidents, were general practitioners.
Many practiced in the rural districts
and followed their calling in the vil-
lages and towns that lie among the hills
of North Louisiana—along the banks of
the Mississippi or along the inland streams
of our picturesque and florid Acadian
Parishes. Only those who have lived the
kindly, mutually dependent life of the
country, can tell how near the physician,
who is the main reliance in sickness of all
the people among whom he labors—how
they value him while living, how they
cherish his memory when dead. For the
friends and former colleagues of ours who
have gone before us, there is no more toil,
“they start from their slumbers no more at
the cry of pain; they sally forth no more

in the storm; they ride no longer over the lonely roads that knew them so well; their wheels are rusting on their axles or rolling other burdens; their eyes are closed to all sorrow they lived to soothe." Few of those who lived and practiced in the country districts attained great fame beyond the boundaries of the State or were known by their merit outside their own communities or apart from their constituency in this Society. But they have left behind them that loving remembrance which is better than fame, and if their epitaphs are chiseled briefly in stone or are merely recorded in the transactions of this Society, they were written at full length on living tablets in a thousand homes to which they carried their ever welcome aid and sympathy.

Let us hope that our dead have at last found that rest from which neither Summer nor Winter, day nor night, had granted to their unending earthly labor.

With our most beloved poet-doctor, Oliver Wendell Holmes, let me repeat these words, as he did, at the close of a farewell address:

"My show of ghosts is over. It is always the same old story that old men tell the younger ones. Some few of whom will in their turn repeat the tale, only with altered names to their children's children."

"Like phantoms painted on the magic slide,

Forth from the darkness of the past we glide,

As living shadows for a moment seen
In airy pageant on the eternal screen,
Traced by a ray from one unchanging flame,—

Then seek the dust and stillness whence he came."

DUODENAL FISTULA.*

W. H. PARSONS, M. D.,

VICKSBURG, MISS.

An ulcer situated on the anterior wall of the stomach and near the pylorus, offers a very different problem from one situated on the posterior wall adjacent to the cardia. A fistula of the duodenum presents an equally dissimilar situation from a fistula low in the ileum. In the first instance the anatomy of the part accounts for the situation. In the second instance the radical difference may be attributed both to anatomic and physiologic reasons. "Duodenal fistulae are neither the rare nor the simple, benign affairs that the silence of the professional pen might lead one to conclude."

Potter states that duodenal fistula is a most baffling and devastating condition, and this is an opinion which is a fact. The duodenum, because of its fixation and because of its proximity to certain other structures, is not particularly susceptible to surgery, and into the duodenum are poured gastric, pancreatic and biliary secretions. It would be idle to review the action of these various juices; the pancreatic secretion serves to digest protein; the bile to digest fats, and both of the above act in an alkaline medium. Confined within their normal habitat they are invaluable, turned loose upon the unprotected body tissues their effect is enormously destructive. Unless one has witnessed the prompt melting away of tissue exposed to these secretions it is difficult to picture their effect. Potter aptly sums up the situation when he says that they literally eat up the tissues of the abdominal wall.

Walters, and others associated with him, have studied the toxemia incident to duodenal fistula. He has found that increasing alkalosis, characterized by decreasing concentration of the blood chlorides and a

*Read before the Mississippi State Medical Association, Meridian, Miss., May 8-10, 1928.

progressive rise of blood urea occurs. He considers that the toxemia results in its major part from a loss of the action of chlorides of the digestive juices which are discharged through the fistula and he considers that this loss turns the tide of the neutrality of the blood toward alkalinity. Any toxic state is accompanied by increasing blood urea, due in some cases to the production of nephritis which prevents the elimination of urea and may infrequently be due to an abnormal amount of urea formed from the breaking down of the body tissues. Toxemia, the result of an obstruction either of the biliary, the urinary or the intestinal tract, of course, elevates the blood urea. It would seem also that the loss of fluid in these cases is a matter of some consequence and that the treatment of the toxemia must not be confined solely to replenishing the chlorides which are depleted. Walters has shown, further, that these conditions are associated with a disturbance of the motility of the bowel.

Colp, in 1923, collected reports of a series of sixty-one cases of duodenal fistula. In the above series six followed resection of the stomach, either by the Bilioth, number one or number two; twenty-three followed operations on the gall-bladder or its ducts, fourteen followed operations for duodenal ulcer, ten nephrectomy; six traumatic rupture of the duodenum; one carcinoma of the pancreas; one intestinal tuberculosis. The gross mortality of all of the above was sixty-one per cent. Thirty-six of the cases were treated conservatively with a mortality of 47 per cent; twenty-five were treated radically with a mortality of 60 per cent.

Walters has seen two cases in the past seven years. He advocates treatment by suction, plus the administration of saline and glucose intravenously.

Berg suggested gastroenterostomy with pyloric occlusion, the object of the above, of course, being to prevent food reaching the duodenum. Colp, in reporting his cases,

stated that this procedure gave a mortality rate of 85 per cent. Simple jejunostomy has also been suggested, and in 1921 Erdman advocated jejunostomy with aspiration of the fistula.

Cameron developed treatment of the condition by suction which must be continuous. Lahey employs this, using progressively smaller catheters.

Various men attempted to dilute the secretion with water, thereby lowering its activity, but this did not prove particularly beneficial.

Mayo obtained one cure through closure of the fistula and Walters feels that if conservative treatment by aspiration plus injection of chlorides and glucose is not successful, or if the condition of the patient is acute that jejunostomy should be done.

Miller has seen three cases of duodenal fistulae, two following nephrectomy and the third following cholecystectomy which was performed by another surgeon. The first two were treated conservatively and both died in eight and two days, respectively. In the third case operation was performed, the opening in the duodenum was closed; this case died twelve hours later. Miller feels that it is a mistake in such cases to wait in the hope either that the opening will close spontaneously or that the patient's condition will improve, and he says that in the future he intends to operate upon these cases as soon as the diagnosis is made.

Potter, after a consideration of the anatomy of the duodenum and pathology of the ulcer bearing area, found that closure of the fistula by suture presented almost insuperable difficulties. As a matter of fact, about the only favorable feature would be that adhesions, as a rule, would not be present for the reason that the digestive juices inhibit their formation. Potter then concluded that the method of treatment should resolve itself to destruction of the potency of the intestinal juices by neutralization of the alkalinity of the media and

by providing some foreign substance upon which they might expend their energy. He suggested that tenth normal hydrochloric acid be used to overcome the alkalinity of the intestinal juices and that a heavy beef extract mixed with olive oil be offered as food for digestion by the juices, thus saving the body tissues. His technique, briefly, consisted in soaking strips of gauze in the acid referred to, packing the wound with these and having it extend over about the edges and then puddling the wound with gauze soaked in the beef-broth-olive oil mixture. Dressings were changed at intervals of two hours until improvement occurred. Potter reported a very spectacular case in which a large destructive fistula with vast destruction of the abdominal wall was closed within three weeks time, and he similarly healed a fecal fistula low in the ileum. Since publication of his paper, Popper has had two other cases of duodenal fistula, three high fecal fistulae, two fistulae after jejunostomy, and several other fecal fistulae low down which had shown skin irritation. All of the above recovered under treatment as outlined above.

Johanson suggested injection of these fistulate with a 1 per cent solution of citric acid, using two to three ounces from three to four times a day, and he reported two cases so treated in which recovery ensued.

I wish here to report a case of my own, in which treatment as outlined by Potter was used and in which recovery occurred.

G. M. D. A white male, married, aged 40 years. Family history was irrelevant. The general health had been fair until 1907, when pain developed in the right side. A diagnosis of appendicitis was made, the pain recurred at intervals and the appendix was removed in February, 1922. In 1907 a small fistula in ano began, which was treated and healed; there was no further difficulty. In July, 1908, there was hemoptysis, and the hemoptysis recurred at intervals up to the present time. Bacilli were found in the sputum in January, 1916. A number of months were spent in the State Sanitorium at Magee and approximately one-year was devoted to intensive treatment of the chest. Early in 1921 pain developed in the upper abdomen and after suffering

for a number of months and with no relief from medical treatment, he had a drainage of the gall bladder performed in March, 1922, and at the same time the appendix was removed. The recovery was uneventful and there was relief for several months. A hemorrhage from the stomach occurred in 1923 and in February, 1925, another severe hemorrhage from the stomach occurred; and at that time a diagnosis of gastric ulcer was made. Examination was essentially negative except for poor nutrition. His weight was 138 pounds. There was a secondary anemia; poor oral hygiene and considerable scarring in the chest and the abdominal condition referred to. Operation was performed April 13, 1925; an ulcer on the posterior wall of the stomach was excised, a second ulcer was found in the first portion of the duodenum and in addition to excision of the ulcer referred to, posterior gastroenterostomy was done. The recovery was stormy, but ultimately occurred and there was no further evidence of ulcer until July, 1927. On January 20, 1926, there was however, a severe hemorrhage from the bladder and cystoscopy revealed a very red and granular mucus membrane just within the sphincteric margin, this was cauterized and the result was satisfactory. In August, 1927, there was a profuse hemorrhage from the stomach and the patient was rapidly brought to a condition of extremis.

Recovery from the hemorrhage was slow but on October 31, 1927, it was felt that as much ground had been gained as could be and surgery was again resorted to. The abdomen was opened with regional anesthesia, it was necessary to add general in order to free adhesions; a large penetrating ulcer of the anterior wall of the stomach was firmly attached to the abdominal wall. The stomach and duodenum were mobilized with considerable difficulty and sub-total gastrectomy was performed. Posterior gastroenterostomy completed the operation. There was no post-operative bleeding and no distention. On the evening of the second post-operative day the temperature reached $103\frac{2}{5}^{\circ}$, pulse 138, and both remained at approximately that level; through the night the pulse became irregular and there was some delirium. The temperature then came down but the delirium persisted and the patient was wild in spite of the administration of morphin, heroin and luminal. At 6 P. M. on the sixth post-operative day it was noted that a little bloody serum drained from the lower part of the operative incision. The following day a left parotitis developed. By noon the seventh post-operative day, there was definite drainage from the wound. The wound was dressed at frequent intervals and the drainage removed by aspiration and heat applied by means of zoelight. The patient grew definitely more toxic and the following evening

the wound drained profusely. By evening of the eighth post-operative day the wound had pulled open, the skin, muscles and fascia were horribly irritated and rapidly were going on to destruction. The entire wound presented the picture of a violent irritation and destruction of tissue. At this time treatment suggested by Potter was begun except that dilute acetic acid was substituted for hydrochloric. The wound was dressed at intervals of every two hours. On the ninth post-operative day there had been no further destruction of tissue, on the tenth post-operative day there was definitely less toxemia and the wound appeared improved. Within three days after beginning the above treatment the wound had very definitely improved and the dressings were only necessary every three hours. It was necessary to drain the parotid. On the twelfth post-operative day there was slight hemoptysis. There were numerous rigors following the administration of saline and glucose intravenously. It was necessary to reopen the parotid. The patient was becoming steadily better, both the condition of the wound and the general condition. On the thirteenth post-operative day the temperature was 99.4/5°, and the pulse 92. The wound was now being dressed at intervals of every four hours. On the thirteenth post-operative day there was only a small amount of drainage from the wound, on the fourteenth post-operative day the temperature was normal, the pulse was 80, and such nourishment as oyster stew, farina and the like were being given. On the fifteenth post-operative day the wound was partially closed by adhesive strapped across the abdomen. It was necessary to again drain the parotid gland on the seventeenth post-operative day. On the twenty-third post-operative day a small fistula, of the part of the stomach that remained, developed and this was closed by means of a purse string suture, plus an interrupted row of Lembert sutures. There was now practically no discharge from the wound and granulation was occurring. On the twenty-sixth post-operative day the wound was resutured. Convalescence from this time on was uneventful and the patient was discharged from the hospital on the thirty-sixth post-operative day.

Two weeks ago the weight was 164 pounds, a gain of thirty-four pounds since surgery and the digestion was satisfactory. Light diet was being taken without difficulty.

My opportunity to observe treatment of duodenal fistula in the manner suggested by Potter has been limited to the case cited. Potter, however, has treated several cases of this sort successfully and has reports of some several others. It would seem to me that this treatment is based upon sound anatomic, physiologic and pathologic grounds. Certain it is that in the past, the methods of treatment used in this condition have been far from satisfactory and the mortality rate has been high. It, of course, will take time and require many cases before one may establish just what the expected mortality may be in this condition, where treatment as outlined by Potter, is used, however, in as much as this treatment is worked out on rational grounds, it would seem at this time to be the treatment of choice.

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DISCUSSION.

Dr. M. Ewing (Amory): I do not want to discuss this paper. I think we want to congratulate Dr. Parsons on his patient getting well, regardless of whose treatment he used, and those surgeons who have ever had one of these things to treat I think will also congratulate him.

OBSERVATIONS OF SOME CHRONIC
DISEASE CONFRONTING PUB-
LIC HEALTH.*

WALLACE SHEELY, M. D.,

GULFPORT, MISS.

In selecting this subject for my paper, your attention will be called to diseases more or less chronic, especially the more common diseases that affect the public in general. The medical profession has always manifested a rather altruistic spirit in relation to the public. With the remarkable advancement in medical science the responsibility of the profession in the prevention and treatment of chronic diseases has been proportionately increased. Enlightened as the public will be to new advances in preventive medicine, so much more exacting will be the practice of medicine. Organized medicine has assumed a position of leadership in the past in the prevention and treatment of diseases relating to the public. Continued interest and observation has led us to the conclusion that chronic diseases are the aftermath of an acute process, continued until it assumes a chronic character, either from neglect or ignorance on the part of the patient.

In the endeavor to prevent a chronic diseases it is important to impress the public with the importance of early scientific medical advice—in fact, to recognize an acute process and prevent that process from becoming chronic.

If we as scientific medical men recognize an acute process it is necessary that we realize that if the acute process is not checked in the beginning a chronic process will result. It has been our teaching that a chronic disease in a patient leads to a chronic condition elsewhere in a system composed of organisms whose functions depend upon each other.

In our clamor for early recognition of an acute process in our patient in order to

correct the oncoming disease, we safeguard disease in other organs. We have been taught in our medical schools that chronic irritation in tissue is the exciting cause of neoplasms. Today we are constantly observing chronic diseases as neoplasms. The outstanding fact is the controlling influence of some source of chronic localized irritation which, if removed, obviates the development of one of the most dreaded chronic diseases—namely, cancer.

This raises the question as to why cancer should develop if the causes of chronic irritation are avoided, or removed before cancerous change begins.

The second fact, of equal importance, as you well know, is that every cancer is primarily a local disease whose removal and recognition on its early stage, insures a cure.

Ignorance and neglect either on the part of the physician or the patient has led to pitiful results. We as public health workers recognize this fact too well.

If one studies the minute pathology of the new growths, he finds that the variation in malignancy is in inverse proportion to the differentiation of the cells composing the tumor. The observation among public health workers has been this—that the higher the maturity of the cells in neoplastic growth, the lower the degree of malignancy.

McCarty of the Mayo Clinic has demonstrated this fact again and again. Suspicious tissue of lesions should demand a complete investigation and microscopic sections made to determine if malignancy does exist or does not exist.

It is true that the arch enemy of middle age and beyond is cancer, and our measures both for prevention and cure have not advanced in proportion to the increasing need. One woman in eleven and one man in thirteen die with cancer, and this proportion of cancer deaths will be maintained in the enormously greater number

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of persons who reach the cancer age. We must spread more widely the knowledge that chronic irritation is the great underlying cause of this chronic disease. Whenever a certain type of cancer exists in a race of men or in a country with great frequency as compared with other races or countries, it is due to a single cause, usually a social custom. Good dentistry has eliminated a percentage of cancers of the jaw due to irritation of defective teeth and gum disease. Cancer of the lip and tongue is on the increase as the habit of smoking is on the increase in both sexes. It seems to be a well-established fact that in general the distribution of cancer as regards the stomach that 30 per cent are in men and 21 per cent in women.

The influence of drinks too hot to be held comfortably in the mouth in the production of the chronic irritation which precedes the development of gastric cancer seems probable.

Since the advancement of public health work the average length of human life has been increased twelve years. These added years, from the age of forty and fifty-two, brings an enormous number of persons into the cancer age. It is claimed that cancer is not common among aborigines, but they are short-lived and few of them live into the cancer decade. Specific forms of irritation—for instance, irritation caused by the chewing of the betel-nut by natives of the East Indies Islands, produces an enormous incidence of cancer of the cheek and that caused by the wearing of kangrie baskets over the lower abdomen by the natives of Kurdistan produces a large numbers of the cancers of this part of the body. These types of cancer, let me say, are seldom, if ever, seen in this country; are evidences of chronic irritation in relation to malignant diseases and show that the tissues of the aboriginal people are not immune. It may be safely said that all races of this globe are subject to cancer and do have cancer.

Cancers of the external tissues of the body do not seem to have increased in the same proportion as those of the internal tissues. If cancer is on increase there is no reason why cancers of the external parts of the body should not increase proportionately. Is it not probable that readily visible cancers were diagnosed, as commonly in the olden times as at present, even with our refined methods for its diagnosis? Our new diagnostic means of discovering diseases of the concealed organs of the body have increased greatly in recent years. The roentgen-ray, the various "scopes" and the exploratory incision enables one to recognize disease formerly undetected. Internal cancers and tumors are no longer hidden and if diagnosed early and removed early before they spread to other tissues can be successfully removed by surgery. The recognition and elimination of known causes of irritation are aiding in the reduction of external neoplasms. In this respect, witness the recognition of the effect of the heat of the clay pipe in the production of cancer of the lip and tongue, the effect of broken and jagged teeth in the production of cancer of the mouth. When these conditions are seen and immediate treatment advised, a great many cases are saved from ultimate death by this chronic disease. The incident of cancer of the internal parts of the body is beginning to diminish, because of the fact that a host of causes of chronic irritation of the internal organs are being detected and removed or prevented. It has been found that irritation from gall stones and chronic diseases of the gall-bladder often leads to cancer of the gall-bladder and its ducts. Gall stones are now removed earlier and as a result cancer of the gall-bladder is diminishing. Is it possible that we have become cancer alarmists and have overlooked the obvious and have lost sight of these important factors in the development of our knowledge of cancer? We can not and must not depend too much upon cold statistics to guide us. Sir Berkely Moynihan of England says that statistics can be

made to tell anything, even the truth. While it may be that cancer is on the increase, there is greater alarm over the increase in cancer among the statisticians than among the clinicians.

We hear little of the thousands and thousands of persons who have been cured of cancer by early operation, but the deaths are heralded so widely that this public has become frightened and they tried to postpone examination until their condition is hopeless and beyond any relief. They are dying of malignancy that, in its early stage, should have received early treatment.

CONCLUSIONS.

Our knowledge of cancer and neoplasms in general is excellent so far as it goes. Because we are in doubt as to the exact exciting factor, we should not be too pessimistic. The discovery of the bacillus of tuberculosis by Koch as the cause of consumption did not by any means bring about a cure for tuberculosis but it did make us recognize the cause and prevented many deaths from this disease. We should not emphasize our failure to learn the exact cause of cancer to the extent of failing to make use of the wealth of knowledge which we possess concerning the disease itself. It is something to know that it is not hereditary in the ordinary sense, although certain families may have tissues more subject to chronic irritation than others; but, even so, it has been shown how quickly this factor is bred out. It is a consoling fact to know that cancer is not contagious, especially to public health workers, and this is an important factor in its combat.

Elimination of all sources of chronic irritation, early diagnosis and removal of the growth while it is still local, are the salient points in the prevention and cure of chronic neoplastic disease that confronts us as public health workers.

THE FUNCTION OF A MODERN STATE HOSPITAL FOR MENTAL DISEASE IN OUR SOCIAL SCHEME.*

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The care and treatment of the insane is essentially a medical problem. Hence no state hospital can achieve the highest success without the interest and active support of the medical profession. The subject presents a social and economic aspect also which demands a closer relationship between the hospital and the public.

Not so long ago the public regarded a hospital for the insane much the same as a prison. Both were places for the detention of social misfits, and the so-called asylum was established for the protection of society, rather than for the treatment of the unfortunate. Some years later the welfare of the insane themselves became a matter of consideration, and the better type of custodial institution was developed. In these while the patients were kindly treated, the medical treatment was limited to physical ills. During recent years a still further advance has been made. The fact that the lunatic asylums of not so long ago are now termed hospitals, signifies far more than the mere change of name indicates. A complete revolution has been wrought in the administration of these hospitals and instead of places for custodial care they have become places for the active treatment of mental disease.

It is generally recognized today that active treatment of the insane brings results and with this knowledge it behooves us to demand that every insane patient be given the benefit of every means of treatment of proven value. With the constant necessity of exercising economy, needs can be met but gradually, but that should stimulate our efforts all the more to obtain the necessary facilities. No insane patient should be allowed to lapse into chronicity because of the lack of necessary facilities. The inter-

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est of society and the right of the individual sufferer are one in justifying a reasonable expenditure if, thereby, an increased number of mentally sick can be restored, so they can resume their places in our social scheme.

A well trained medical and nursing force is an absolute necessity for the proper handling of our problem. The organization of the medical and nursing work presents difficulties not found in other medical specialties. A physical examination must be of a thorough nature. Laboratory assistance is necessary to clear up doubtful points in diagnosis. The clinical laboratory and pathological work are of major importance. Therapeutic advances go hand in hand with the correlation of clinical and pathological findings. Much research yet remains to be done in order that we may know more of the actual material changes occurring in mental diseases.

At this point it might be well to mention that there appears to be no good reason for antagonism as regards the etiology of mental disease, between the materialistic trend of thought, and the theory of the psychogenic origin of such disorders. Both factors are usually at work. We must remember, however, that the same psychogenic factors which produce mental disease in one person may not produce it in another. It is a question of the nervous soil upon which exciting causes operate. It is possible that a defective nervous soil, lacking the exciting psychogenic factor, or a psychogenic factor, lacking a favorable predisposing soil, may fail to produce mental disease. The combination of both is always disastrous.

You have no doubt heard it said that psychiatry has not kept pace with the advance made in other specialties of medicine. Such criticism is not justified. Present day psychiatry is not only using all the methods of research used in general medicine and surgery, but in addition is using methods of investigation peculiar to itself. Some of these methods are: The psychoanalysis

of Freud; association tests; the reaction to electrical stimuli as modified by emotions; the scientific study of dreams; etc.

It is no longer deemed sufficient to simply classify our patients from a symptomatic and prognostic standpoint. Every patient should be studied as an individual. In this study there is first the question of the original personality and the normal reaction of the patient to his environment. When possible, an idea must be obtained of the patient's life and surroundings before the mental breakdown. This is necessary in order that the chain of events, leading to the final catastrophe, may be reconstructed, which most always represents the sum total of a combination of factors. This is true even in exogenous disorders, for only a comparatively small proportion of alcoholic drinkers develop psychoses, and it has been estimated that only from 4 per cent to 5 per cent of all syphilitics become paretics. We must not only study all difficulties of adaptation, but the psychic levels at which they appear. A situation easily handled by one person becomes an obstacle to another, even if there is no intellectual defect. There is such a thing as psychic inelasticity, and it behooves us to learn, in a given case, just what circumstance or set of circumstances renders manifest this so-called "psychic stiffness." It is our duty to uncover all upsetting and underlying trends of thought. The patient must be introduced to himself and made to realize the dynamic value of his unhealthy mental habits.

It is also necessary to obtain from every available source information concerning the earliest deviation from the normal, as well as regards the patient's early life, family history, etc. In this connection the family physician often has an advantage over the hospital physician, and we invite your assistance in securing all pertinent facts regarding the cases you send to the hospital. After an exhaustive study of each individual patient we are in a position to direct therapeutic effort in an intelligent manner. Thus the time robbing character of a modern mental examination is ap-

parent, so it is obvious that more trained physicians are necessary than the laity sometimes realize. It is through you physicians that such facts can best be made known to the public, in whose interest we are all working.

In order that a patient may improve he must be submitted to the right kind of influences and such influences imply a predominating medical atmosphere. The hospital that does little medical work not only fails in the performance of its duty to the patients entrusted to its care, but to the community which maintains it. Were we still engaged in merely providing custodial care of those unfortunates, for whom there was no hope, there would be more excuse to the pleas of economy, with which requests for added medical facilities are oft-times assailed. However, we are engaged in treating disease and the average properly equipped hospital can show a recovery rate of from 25 per cent to 30 per cent of all mental cases, committed to it. Without results we would not be justified in asking for more than the mere essentials for custodial care, but in view of such results no community should be satisfied with anything less than the best service. It is, indeed, true economy to make such provision as, every patient returned to society is not only an actual economic gain, but is no longer a positive economic loss.

Every hospital should be provided with facilities necessary for the treatment of special indications. Such indications may mean the employment of some of the various forms of hydrotherapy, electrotherapy, mechanotherapy, massage, or special diet. It is well known today that hydrotherapy with the aid of individual nursing and occupation has reduced restraint to the minimum. It has been possible to practically abandon straight jackets, muffs, etc., as well as the use of powerful hypnotics which are, after all, palliative rather than curative. Some physical defects may require the services of specialists, hence every state hospital should have at its command a staff

of competent consultants. There is no special surgery in mental disease, except as uncorrected surgical conditions are often constant reflex irritants. Gynecology offers a wide field of usefulness among the women, and the surgical treatment of hernias and hemorrhoids has proven of special value among the men, and the elimination of focal infection such as diseased tonsils, abscessed teeth, etc., have been of value in both sexes. Special provision for dental work is required and this work should be prompt and thorough.

Classes in arts and crafts, gymnastic and calisthenic exercises, folk dancing, and other forms of recreation and entertainment all have fields of usefulness in connection with treatment. It is not only in recoverable cases that such work is of value, but also in demented and chronic cases. It is often possible to re-educate these chronic cases to a remarkable degree, thus rendering them less destructive and in many instances making it possible for even these chronic patients to assume a small degree of usefulness in the hospital's activity. Again all this makes a comparatively large proportion of attendants and nurses necessary as the greatest success can only be obtained through the personal attention of those trained to the work.

The hospital for mental disease has a function to perform in research work. Many questions are still unanswered. For instance, the question asked as to why alcohol acts differently upon different individuals producing in one a delirium, another an acute hallucinosis, another a paranoid trend, another a polyneuritic syndrome, or simple deterioration, is unanswered. We do not know why a fairly definite proportion of syphilitics develop paresis. We are beginning to understand the meaning of functional psychotic reactions in certain individual cases, often finding the psychosis is in the nature of an escape from an intolerable situation, but there are many more cases which with present methods we are unable to comprehend from such a

viewpoint. So much work remains to be done.

No state hospital program can be complete without a preventive system. It is entirely out of line with the sound psychiatric thought of the day to simply deplore increase of mental disease and necessity for increased hospital accommodation. Now that we know the definite relationship existing between mental disease and mental hygiene, and that prophylaxis is possible, concrete work along this line should be part of the program of every well organized state hospital. The state hospital should be the coordinating center for such work, which should be done in conjunction with all voluntary agencies interested in public and individual health. Many complete breakdowns may be prevented by discovery and adequate treatment in the beginning of the disorder.

Hence there is no way in which a state hospital can do more to care for the mental health of the citizens of the state than by well organized out-patient clinics. Not only do they provide for the maximum number of patients, for the minimum cost, but they bring the patients in contact with the psychiatrist during the incipient stages of the disease. With the outdoor department of a hospital regarded as a place where advice and treatment of so-called nervousness can be received, there will eventually result a greater willingness on the part of patients to take advantage of the opportunity. Assistance is made available when treatment is most hopeful and before the patient becomes so bad he is incapable of realizing his needs. Such work should of course in no way interfere with the family physician, to whom all cases failing to present psychotic symptoms, or presenting some physical ailment in connection with a psychosis, should be referred. Attendance at out-patient clinics brings the hospital physician into closer contact with the general medical practitioner in a way that is not only mutually helpful, but helpful to the patient as well.

Help given the practitioner increases his interest in, and respect for psychiatry, as well as his inclination to support the hospital. With such a broadening of a hospital's activity it is easier to inculcate the idea that the mentally sick are as much sick as are the sufferers from physical disease, and hence their care constitutes a health problem. It is important to impress upon the public the incongruity of placing the care of the mentally sick pending commitment upon peace officers when it properly belongs to health officers. If the public realized the pernicious effect upon the acute mental sufferer of prison cells and handcuffs, especially when such treatment augments and strengthens existing delusions of persecution, it is certain other provisions would be made.

A distinct educational value is also to be gained, which may be enhanced by occasional talks by the physicians of the state hospitals to medical societies, to teachers, to parent organizations, to civic clubs and to church societies. This extension work is generally regarded as a definite part of every well organized state system of dealing with mental disease. Society is beginning to realize, too, that what has been learned in the medical study of these disorders may be made useful in dealing with difficulties that have heretofore been considered outside the range of psychiatric knowledge and activities. In some states the out-patient psychiatric clinic is becoming a pivot point from which preventive medicine, in so far as it relates to the mental hygiene of the community, is radiated. Ministers, judges, teachers, physicians, lawyers, and probation officers are turning daily to the psychiatrist for advice in regard to the problems of human conduct.

With the development of preventive work, the development of after-care work should go hand in hand. A genuine parole system offers an opportunity for real and direct economy. By materially reducing the number of cases to be cared for in the hospital a financial reduction is made evi-

dent. If any number of cases in our hospitals can, under proper supervision, be cared for at home, that is clear gain. To insure proper supervision, a real system of medical and social oversight is necessary. If a patient returns to the same environment and conditions amid which his psychosis developed, there is likelihood that a recurrence of his mental symptoms will take place. Hence, a skilled, tactful and well trained psychiatric social worker is

essential. Such an individual cooperating with the hospital medical staff can often modify or change environmental conditions, can give advice regarding work, can smooth out family differences so pernicious in their effects on recently recovered mental cases. It is unfortunate that preventive work, either before or subsequent to hospital residence is not susceptible to accurate statistical treatment, for if it were, the element of economy thus revealed would justify such activity.

REVIEWS

SUPERFICIAL INFECTIONS.*

ALTON OCHSNER, M. D.,†

NEW ORLEANS.

PART I.

Infections of the skin comprise an important part of the surgeon's practice. As the condition usually comes under the head of "minor surgery," it is considered by most individuals, especially surgeons, to be of minor importance. An attempt is made in this review to differentiate between the various superficial infections and to stress their importance.

The organisms which are usually responsible for most of the superficial infections belong, as a rule, to that group of organisms commonly known as pyogenic organisms. The micro-organism which is the most frequent offender in superficial infections is the staphylococcus aureus. This organism is found, however, less frequently on cutaneous surfaces than is the staphylococcus albus. The staphylococcus aureus is the organism which is usually responsible for localized inflammatory processes in the skin, such as furuncles and carbuncles, deep abscesses, and also osteomyelitis. The lesions produced by staphylococci as contrasted with those produced by streptococci are characterized by

a tendency toward localization and necrosis of tissue, rather than a diffuse cellulitis (Meleney).⁽¹⁾ The staphylococcus albus is found much more frequently in nature than is the staphylococcus aureus. It is very frequently found in wounds, together with the staphylococcus aureus, but is a secondary invader in most cases. Rosenbach⁽²⁾ found the staphylococcus albus responsible for just half as many human infections as the staphylococcus aureus.

Streptococci are found much less frequently than staphylococci, but because of the severity of the lesion which they produce are more important from the surgical standpoint. The streptococci may be divided into two types: those organisms which hemolyze blood and those which do not. The lesions produced by the streptococci differ from those produced by the staphylococci in that the extension is apt to be much greater, there being less tendency toward localization and less tendency toward necrosis of tissue. The streptococcus is usually the offending organism in cases of extensive cellulitis, as well as acute lymphangitis, lymphadenitis and tenosynovitis. Streptococcus erysipilatis, as first isolated by Fehleisen,⁽³⁾ is a specific strain of hemolytic streptococcus which is generally accepted at the present time as the cause of the clinical condition, erysipelas. Birkhaug⁽⁴⁾ has shown that 91.2 per cent erysipelas strains of streptococci belong in one group. The bacillus

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of swine erysipelas *B. erysipelas-suis* which was first described by Rosenbach⁽⁵⁾ is now known to be the etiological agent in erysepeloid. This condition occurs frequently in the United States, but is often not diagnosed.

B. tularensis, first isolated by McCoy,^{(5) (7) (8)} has been shown by Francis⁽⁹⁾ to be the cause of tularemia. Even though this condition is a bacteremia it will be discussed because of its cutaneous manifestations. The anthrax bacillus, while not found as frequently as pyogenic organisms is occasionally responsible for superficial suppurative processes in the skin. The reaction produced by the anthrax bacillus is less than that produced by pyogenic organisms.

SURGICAL PATHOLOGY.

The reaction resulting from the implantation of organisms in the body, varies. It depends upon, first, the virulence of the invading organisms, second, the number of the organisms, and, third, the local and general defense reaction (Walton Martin).⁽¹⁰⁾ Because of the protective covering of the body, *i. e.*, the unbroken skin, it is impossible for organisms to gain entrance to the body unless some break in the continuity of this protective covering occurs. At the entrance of the hair follicles, sweat, and sebaceous glands this protection is less marked. A break in the continuity of the skin may vary from an extensive wound reaching into the depth of the body to such a slight wound that it is not recognized by the individual. The possibility of organisms gaining entrance to such normal structures as hair follicles, sweat, and sebaceous glands, wherein an inflammatory process may arise, as the result of stasis, must not be forgotten. Garre⁽¹¹⁾ produced furunculosis by rubbing a culture of *staphylococcus aureus* on his own arm.

The virulence and the number of organisms invading the host are extremely important in the resulting infection. Martin⁽¹⁰⁾ considers three possibilities when bacteria gain entrance to the body:

1. Organisms are destroyed early, without there being any evidence of their having been present.

2. Because of the greater virulence of the organism or a larger number having been present, a local reaction of greater or lesser severity occurs.

3. Because of extreme virulence of the organisms and lack of resistance on the part of the individual, there is a rapid general invasion of the bacteria without the production of a local lesion.

In the first case, microscopically there is an increase in the cells and serum of the part, which is so small in amount, however, that there is no clinical evidence of it. The organisms are removed by the cells, principally the polymorphonuclear leukocytes, by the process of phagocytosis. Other important cells aiding in the removal of micro-organisms are the endothelial cells of the reticular-endothelial system which are also active phagocytes. These are spoke of as macrophages. In the second type, in which there is a local reaction, the process is very much the same as in the first, except that it is more marked. Here there is definite change in the vascular tree; there is marked dilatation of the arterioles, capillaries, and arteries. An active hyperemia occurs. The blood stream is at first increased in velocity but soon becomes slowed. The leukocytes which normally occupy an axial position in the capillaries migrate to the peripheral portion and become adherent to the capillary wall. The leukocytes migrate through the vessel wall and come to lie in the lymphatic spaces outside of the capillaries. There is an attempt on the part of the fixed cells of the part, as well as the wandering cells, to limit the infectious process from the rest of the body. Phagocytosis is carried out as in the stage in which there is no local reaction. The tissue spaces become filled and distended with serum which is rich in fibrin. The fibrin is deposited, producing an induration in the area. The serum, with its contained antibodies, agglutinins, and bacteriolysins is

an important protective factor. The toxins which are produced are diluted and possibly neutralized. The phagocytes produce enzymes, which not only digest the organisms following their ingestion, but also digest the destroyed tissue cells which have been acted upon by the toxin. In this way a breaking down of the process with liquifaction occurs. In the third type of reaction described by Martin,⁽¹¹⁾ due either to the marked increase in the virulence of the organisms or the lack of resistance on the part of the host, no local reaction results, but the invading organisms become disseminated throughout the body by the lymph and blood streams without their being inhibited or destroyed locally.

Lesions produced by the anthrax bacillus are characterized by a relatively few leukocytes, resulting in little tryptic digestion, producing relatively little liquifaction. As described by Martin,⁽¹¹⁾ the bacilli lie in the corium, especially in the papillar bodies. They can be seen extending into the subcutaneous tissue and into the lymph nodes.

Erysipelas is an acute streptococcic infection of the lymphatics of the skin. Pathologically multiplying streptococci are found in advance of the raised red area.⁽¹¹⁾ In the reacting red area masses of leukocytes are present, around the blood vessels, hair follicles and sweat glands. The tissue lymph spaces are filled with exudate under considerable tension and contain many streptococci. The process is largely localized in the dermis, and extends into the superficial layers of the epithelium producing blebs. Rarely the process may invade the subcutaneous tissues. Suppuration is rare but it may occur if the subcutaneous tissues become involved.

The histopathology in erysipeloid infections, as described by Gilchrist,⁽¹²⁾ consists of an acute inflammation of the whole corium and slight inflammation of the subcutaneous tissue. The epidermis is thickened and invaded by numerous polymorphonuclear leukocytes. The ducts of the sweat glands are particularly involved in

the inflammatory reaction. A large number of small lymphoid cells are found surrounding the blood vessels. No organisms are seen in the sections.

The early primary lesion of tularemia has never been examined microscopically. As described by Francis and Callender⁽¹³⁾ the following changes occur in the condition. The early reaction consists of a "leukocytic response." The increase in cells consists principally of the epithelioid cells or histiocytes—there also being an increase in the polymorphonuclear cells. Giant cells of Langhans, similar to those found in tuberculosis are formed relatively early. Definite changes due to a reaction in the endothelium occur in the blood vessels which are similar to those seen in obliterative endarteritis. There is little increase in the fibrous tissue. Necrosis similar to caseation occurs in the neighboring lymph nodes and spleen. Because of the similarity to tuberculosis most lymph glands removed from patients suffering from tularemia have been given the diagnosis of tuberculosis.⁽¹⁴⁾

SYMPTOMS AND SIGNS OF SUPERFICIAL INFECTIONS.

Most of the superficial infections—at least those due to the pyogenic organisms—present most, if not all, the classical signs as described by Celsus, *i. e.*, rubor, calor, tumor, dolor, and *functio laesa*. Of these various signs the most important as regards early diagnosis is localized pain upon pressure—*i. e.*, tenderness. The redness is undoubtedly due to the increased vascularity of the part. The surface vessels are dilated as well as those in the immediate vicinity of the organisms.^(11, 15) The increase in heat is probably due, to a certain extent at least, to the hyperemia. According to MacCallum⁽¹⁶⁾ the increase in the rate of flow of blood is responsible for the increase in the heat, as the blood is not cooled as rapidly as normally. Gessler⁽¹⁷⁾ demonstrated that there was an increased oxygen consumption by the cells in an inflammatory area. This he interpreted as evidence of an increase in metabolism, which he thought was the cause of the

heat occurring locally in inflammation. The swelling in inflammation is due to the hyperemia, increase in the size of the cells, and the filling of the tissue spaces with inflammatory exudate. The pain is probably caused by the pressure of the exudate on the nerve endings. It is greatest in those areas in which there is no expansion. "Chemical irritation of the nerve endings from products of protein decomposition" is supposed by some to be the cause of the pain.⁽¹⁵⁾

The disturbance in function is, in part, due to the pain and in part due to the effect of the toxins upon the involved structures.

As mentioned above, the earliest and, therefore, the most important sign in infection is localized tenderness; the area is often not larger than the head of a pin. In order to elicit this localized tenderness, it is desirable to employ a relatively small object such as a probe. Recently Kenyon⁽¹⁸⁾ advocated the use of a common match, in order not to frighten the patient.

In addition to the local signs of infection there are usually certain systemic signs. Malaise is present in most extensive infections. Fever may precede many of the local signs. It is an indication of bacterial destruction within the body.⁽¹¹⁾ Associated with the fever, and dependent upon it to a large extent, is an increase in the pulse rate which usually parallels the temperative curve. Leukocytosis is present in most infections. Associated with the increase in the number of white blood cells is a relative, as well as actual, increase in the polymorphonuclear cells. Leukocytosis and fever may be absent in overwhelming infections, as both are indicative of the reaction to the infection.

TYPES OF SUPERFICIAL INFECTION.

Localized abscesses: The most frequently encountered localized abscesses in surgery are furuncles and carbuncles. A furuncle is a localized staphylococcic infection involving a sebaceous gland, hair follicle, or a sweat gland. Infection of these struc-

tures would not occur unless, due to a trauma or to the blocking of the excretory duct, stasis results, which favors the development of organisms. Irritation, such as rubbing of a collar, may be responsible for the development of such infection. As emphasized by Martin,⁽¹¹⁾ the sebaceous glands are almost entirely endermic, whereas the sweat glands may extend deeper, even into the subcutaneous tissue. As a result of trauma, such as the pulling of a hair or some irritating lesion, organisms gain entrance to these normal structures and begin to multiply. Microscopically, all the signs of inflammation, as described above, are present.

Diabetes is an important predisposing factor because of the hyperglycemia, the increase in blood sugar favoring the growth of organisms. Adjacent hair follicles may become infected. The earliest symptoms produced by a furuncle are itching and stinging, later followed by severe pain, because the inflammatory process is located in the dense true skin. Redness and slight swelling, usually about hair, occur early. If treated properly a small area of liquifaction appears in the center of the lesion within a few days.

The treatment of a furuncle is, in the early state, conservatism—i. e., avoidance of all trauma. Squeezing is mentioned only to be condemned, as it is usually responsible for the extension of the infection beyond the localized process. The application of heat in the form of moist compresses is of considerable value. After suppuration as occurred a small incision should be made over the suppurating area and the liquified material allowed to escape. Either dry or moist sterile dressings should be applied until the wound is healed.

Carbuncle: A carbuncle is an extensive subcutaneous infection usually caused by the staphylococcus, generally causing severe systemic symptoms. As emphasized by Martin,⁽¹¹⁾ the extension of the infection from the true skin structures into the subcutaneous tissue varies in different loca-

tions, and depends largely upon the amount of subcutaneous tissue, as well as the attachment of the skin to the subcutaneous tissue. A subcutaneous infection of the back of the neck produces considerable necrosis of the facial bands connecting the skin with the deep fascia because of their density. On the other hand, in those areas in which there is considerable loose areolar tissue, the development of a subcutaneous localized infection, which differs clinically from that of a carbuncle, is more apt to occur. In this instance a localized subcutaneous abscess results. A carbuncle is usually the result of a cutaneous infection, and is almost invariably preceded by a furuncle. Usually a history can be obtained that the patient has attempted to treat the furuncle by squeezing it. By so doing the protecting pyogenic membrane has been broken, permitting the organisms to gain entrance into the subcutaneous spaces. An extension of the inflammatory process results, is evidenced by a brauny, red, painful, tender mass. Through several openings, as the case progresses, pus may exude, in contra distinction to a single opening in the case of a furuncle. A carbuncle is also especially prone to be associated with a hyperglycemia. The constitutional symptoms in a carbuncle may be quite severe, as evidenced by fever, chills, and even septicemia. Pathologically, the process is the same as that which occurs in furuncles, except that the necrosis, with its resulting slough, is very much greater, producing a large granulating wound.

The treatment of a carbuncle may be divided into conservative and radical. No case of furuncle or carbuncle should be treated without first determining whether the patient is suffering from diabetes, and even though no glycosuria is found, a blood sugar determination is indicated in order to detect the presence of a hyperglycemia. Pfahler⁽¹⁹⁾ advises a reduction of the carbohydrates in the diet to a minimum in all cases of furunculosis. Bieber⁽²⁰⁾ treated furunculosis by administering 2 units of insulin daily for four days. As a result of this all furuncles disappeared.

A conservative treatment of furuncles and carbuncles is the treatment with vaccines. The treatment of carbuncles with vaccine is comparatively recent. Gruca,⁽²¹⁾ in 1924, reported 150 cases of carbuncles and furuncles so treated, all of which recovered. In this number of 150 cases there were 12 cases of carbuncle of the face. The vaccine which he used contained staphylococci, streptococci, and bacillus pyocyaneus. This author advises the injection of 500 million organisms the first day, of 700 million the second day, 1000 million the third, and a 1000 million the fourth day. Following the injection of the maximum dose there was a slight shock, and within six hours after the injection the patient had a high fever and repeated chills. In a few hours the subjective inflammatory signs began to disappear. The pain and tenderness in the affected area subsided. In every case after 24 hours the subjective inflammatory signs had markedly diminished. Gruca⁽²¹⁾ believes that the best results were obtained in infections of the face, because of the excellent blood supply of the part. The reactions which he obtained from this vaccine therapy were so severe that the patient had to stay in bed. The reaction was, however, much less severe than that resulting from multiple incisions under an anesthetic or from the injection of blood. Lyons⁽²²⁾ treated fifty cases of carbuncles located in various parts of the body by means of staphylococcus vaccine. Doses very much in excess of those ordinarily given were administered. The vaccine employed by Lyons stock mixed vaccine containing 100 million organisms per cubic centimeter. An initial dose of $\frac{1}{2}$ c.c. is administered. The dose is increased $\frac{1}{2}$ c.c. daily until 2 c.c. are administered. The results obtained by Lyons have been very satisfactory, there being a cure in every case with a definite shortening of the convalescence. The treatment as executed by Lyons is an ambulatory one permitting the patient to work while being treated.

The application of rest to the part is important in all infections. Livingston⁽²³⁾ even advises the application of a plaster of

Paris cast to the neck, in order to immobilize the head in carbuncle of the neck. Heat applied in the form of moist dressings is of distinct value in all of these infections. Larkum⁽²⁴⁾ reported the results obtained from use of bacteriophage in furunculosis. He employed this treatment in 66 cases, in 63 of which marked improvement was noted.

The injection of blood around localized infectious processes has been employed since 1908, when Mueller and Peiser⁽²⁵⁾ first injected defibrinated blood obtained from the patient into pyogenic abscesses. Rieder,⁽²⁶⁾ in 1922, observed that following the incision of furuncles and carbuncles that the resulting slough could be made to separate much earlier if the wound were packed with gauze soaked with horse serum. An injection of horse serum into the center of furuncles caused rapid sloughing. This technic was also employed in treating carbuncles.⁽²⁷⁾ Laewen,⁽²⁸⁾ in 1923, because of bad results obtained by the usual methods of treatment, advocated the circuminjection of blood in the severe localized infections—*i. e.*, neck and lip carbuncles. By the circuminjection of blood Laewen hoped to limit the infectious process by obliterating the veins and lymphatics and thus prevent the absorption of toxins and organisms. Hilgenberg and Thomann,⁽²⁹⁾ working in Laewen's laboratory, demonstrated that lethal doses of strychnin, cocain, or curare could be well tolerated when injected into the tails of mice if previously the tail proximal to the drug had been injected with blood. Beneficial results following the circuminjection of blood in suppurative lesions have been reported by Rieder,⁽³⁰⁾ Nourney,⁽³¹⁾ Thomann,⁽³²⁾ Lenhart,⁽³³⁾ Kuhn,⁽³⁴⁾ Goljamizki,⁽³⁵⁾ and Carp.⁽³⁶⁾ In most of the cases, except those reported by Carp, the treatment consisted of the injection of blood combined with incision. The patients in Carp's series were treated only by the circuminjection of blood. Berndt⁽³⁷⁾ and Schlesinger⁽³⁸⁾ advise against the use of local injections in acute infections, the

former preferring the roentgen-ray treatment of carbuncles of the face, the latter preferring excision of most carbuncles. Carp⁽³⁹⁾, in a later report, appears less enthusiastic about the circuminjection of carbuncles with blood than he did in his first publication. He states "Circuminjection of centogenous blood may be used in selected cases (carbuncles), and it is a valuable adjunct in accessible spreading infections treated by an other method."

In 1921 Heidenhain⁽⁴⁰⁾ advocated the use of roentgen-ray irradiation in cases of axillary furunculosis. The dose he employed was one-third of a skin erythema dose with a three mm. aluminum filter. In 1924 Heidenhain and Fried⁽⁴¹⁾ reported beneficial results obtained from the roentgen-ray treatment in many types of inflammatory processes. Lewis,⁽⁴²⁾ Hodges,⁽⁴³⁾ Berndt,⁽³⁷⁾ and Carp⁽³⁹⁾ have employed this type of therapeusis with good results. The exact mechanism by which infection is controlled following irradiation is not understood. Heidenhain⁽⁴⁰⁾ believes that the beneficial effects are due to a general rather than local reaction. Kohler⁽⁴⁴⁾ and Schaefer⁽⁴⁵⁾, on the other hand, have demonstrated experimentally that irradiation exerts a powerful local effect in superficial infections. Kohler⁽⁴⁴⁾ produced a sterile inflammation in guinea pigs by injecting diphtheria toxin intracutaneously. After one to five days a piece of skin was excised and examined histologically.

The inflammatory edema and infiltration disappeared immediately after the irradiation. Schaefer⁽⁴⁵⁾ produced a bacterial inflammation in animals. Some of the inflammatory processes he treated with roentgen-ray irradiations. Another group of animals were irradiated without the production of a bacterial inflammation. Sections were removed after varying periods of time, ranging from 6 hours to 21 days. Schaefer found the following changes: in those animals which were only irradiated definite changes occurred in the muscle. There were signs of inflammation as evidenced by an increase in

the number of perimysial cells. The sections which had been both infected and irradiated differed considerably from those which had been infected alone. In the former group there was a much larger number of cells present and connective tissue proliferation was more marked. No difference would be demonstrated between the two groups before 6 hours. Schaefer believes, from his experimental work, that irradiation is effective in combating infections because of the increase in the inflammation. In his series of examinations the inflammation was greater in 45.8 per cent of cases, less in 29.2 per cent, and about the same in 16.7 per cent.

Bockenheimer,⁽⁴⁶⁾ in 1920, reported good results obtained in cases of localized infections following freezing with ethyl chloride. Knob,⁽⁴⁷⁾ employing the technic advocated by Bockenheimer⁽⁴⁶⁾, was unable to obtain any results with ethyl chloride. He obtained excellent results, however, by freezing the furuncle or carbuncle with carbon dioxide snow. Over a hundred cases treated in this way were reported.

In contrast to these conservative views, most surgeons believe that carbuncles, as soon as liquifaction has occurred, should be treated operatively. There is considerable difference of opinion concerning the method of treatment used. The Continental surgeons, as well as some of the American surgeons, favor complete excision of the inflammatory process, believing that in this way it is possible to completely extirpate the process. Others are more conservative, and depend either upon crucial or multiple incisions, in this way decompressing the inflammatory area, which is under considerable tension and which is causing the patient's symptoms. A very satisfactory type of incision consists of multiple parallel incisions, each extending beyond the pyogenic membrane. In this way the inflammatory process is decompressed, drainage is allowed, and healing is favored, because the defect is not as large as that produced by the other types

of incision and from the bridges of skin epithelization may occur.

The convalescence following the crucial incision or excision of a carbuncle is relatively long, because of the large defect which is produced following the separation of the slough. The separation of the slough may take several weeks. In order to hasten the separation, Rieder⁽²⁶⁾ advocated packing the wound with gauze impregnated with horse serum. Niedermeyer⁽⁴⁸⁾ employs a pancreatic ferment in wounds, containing considerable necrotic material.

Hendri⁽⁴⁹⁾ advocates the use of a pepsin-pregel iodine solution in acute suppurations. As shown by Schoenbauer⁽⁵⁰⁾, pepsin, in addition to being a digestant, has an antiseptic value. Bumm⁽⁵¹⁾ introduces non pathogenic proteolytic bacteria into wounds containing sloughs. The organisms grow as long as the necrotic material is present. An enzyme produced by the organisms digests the necrotic material. Healing of large granulating wounds may be hastened by skin grafting.

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(To be continued)

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THE LOUISIANA STATE MEDICAL SOCIETY; AN EPTOMIZED HISTORY OF ITS FOUNDATION.*

On May 22, 1876, the "Plaquemines Parish Medical Association" invited their professional brethren of Louisiana to unite with them in organizing a State Medical Association. May 14, 1877, the "Shreveport Medical Society" took similar action, and November 5, 1877, the first named society renewed its invitation, urging that

a medical convention be held in New Orleans on January 14, 1878.

A number of physicians of New Orleans, under the leadership of Drs. S. E. Chaille, T. G. Richardson and S. M. Bemiss, long anxious to promote the object in view, adopted the suggestion of the Plaquemines and Shreveport Medical Societies and united in issuing a circular letter to the physicians of the state summoning them to meet in convention. These efforts resulted in success; the convention met on the fourteenth, and effected the organization of the Louisiana State Medical Association on January 15, 1878. Of the 58 Parishes of Louisiana in 1878 (there are now 64), 15 were represented. Of the 939 "physicians and surgeons" registered by the U. S. Census, there were 80 who became members of the Association. Of the 80 members who attended the first convention, 46 were from Orleans Parish, and the remaining 34 members were from the 14 country parishes represented. After a session of three days spent in perfecting an organization, the Convention adjourned on January 16, 1878, to meet in New Orleans on January 16, 1879. Dr. Samuel M. Bemiss, of Orleans, presided over the Convention and Dr. James C. Egan, of Shreveport, was elected President to serve at the first regular session which was held in New Orleans on April 8, 1879. Dr. Egan was not able to attend this meeting, and Dr. Bemiss, Vice-President elect, officiated as Chairman in his absence. The meeting of January 14, 1878, "was merely a convention to pave the way for the permanent organization of both state and Orleans Parish Societies and the 80 members of the profession who attended that meeting and signed the register, may, with good reason, be deemed the Founders of our State Society; and most, if not all, of the 46 members from Orleans Parish became the Founders of the Orleans Parish Medical Society."

*From the forthcoming history of the Louisiana State Medical Society by Dr. Rudolph Matas, based upon data furnished by Dr. S. E. Chaille in his two historical papers, "History of the two State Medical Societies organized in Louisiana—in 1849 and in 1878," *New Orleans Med'l and Surg'l Jnl.*, Vol. VI, May, 1878, pp. 867 and 872, and, "Origin of the Orleans Parish and the State Medical Societies and the two chief purposes of the Founders," *New Orleans Med'l and Surg'l Jnl.*, Vol. 63, May, 1911, pp. 781-795.

Drs. Chaille, Bemiss and Richardson are rightfully considered as the primal founders of the State and Orleans Parish Societies, for it was they who constituted themselves a committee to canvass the profession of the state and urge the most influential members in this city and parishes to unite with them in organizing a state society which would become a unit of the American Medical Association of which Dr. Richardson had been elected President in June, 1877. At the convention of 1878, Dr. Chaille was chosen annual orator and chairman of a committee for the permanent organization of both State and Orleans Parish Societies. The chief labor of preparing constitutions for these societies, as usual, was thrown upon the Chairman and proved to be very great. For, as Dr. Chaille, with his characteristic frankness, stated in his reminiscent address of 1911, "I had never studied and knew very little about such constitutions, hence to guide me, I secured and studied the regulations of over twenty state and every notable county and city society in the United States. From the very best of these numerous constitutions were selected those regulations that seemed the very best, adding others deemed very desirable. The result was unanimous approval, first, by the State Committee, then by the Orleans Parish Society on May 6, 1878, and, again, by our State Society, April 9, 1879; *and these were the dates of the permanent organization of our Societies.*"

And it is for this reason that the existence of the Louisiana State Society as a permanently organized and regularly constituted organization begins with April 9, 1879, and that of the Orleans Parish Medical Society dates from May 6, 1878.

The Constitution and By-Laws framed by Dr. Chaille for both Societies endured until about 1903, when both societies were chartered and new regulations were adopted, which, however, contain important relics of the regulations originally prepared by him.

In view of this fundamental work and the enormous and unremitting labor that Dr. Chaille unselfishly gave to the development and highest interests of this and the Orleans Parish Medical Society during the 10 years, 1877-1886, that he was Chairman of the Committee on Organization and Legislation of both Societies—he is legitimately entitled to recognition as the Father of the Louisiana State and Orleans Parish Medical Societies.

This historic right has been too fully and firmly established by Dr. Chaille's own recorded services and achievements to be questioned; and the honors accorded him during life and after his death, in 1913, abundantly testify to the profound respect in which he was held by his fellows, associates and successors in the two societies that he had contributed so effectively to bring into existence.

In justice to his coadjutors and eminent associates, Drs. Richardson and Bemiss, and of the 80 representatives of the profession of the city and country parishes who assembled at the Medical Department of the University of Louisiana on January 14, 1878, to organize the Louisiana State Medical Association, as a state unit of the American Medical Association, it is only right that their names should be recorded in the Archives of this Society as its founders. To this end the House of Delegates of the State Society unanimously voted, at the semi-centennial celebration held on April 8, 1929, that the names of these 80 founders should be included in the roll of honor of the Society and published in the official journal as a commemorative tribute to their service.

In compliance with this resolution the Journal publishes the list of the delegates to the Convention of 1878, as they are recorded in the register published in the Transactions of January 14, 1878. This list has very much the character of a memorial tablet since none of the signers of the Convention, with the single exception of Dr. Ernest S. Lewis, has survived the

viscissitudes of the 50 years that have elapsed since that memorable event.

Dr. Lewis, Professor Emeritus of Obstetrics and Gynecology of the Medical School of Tulane University, at the age of 89 years, attended the semi-centennial celebration on April 9, giving proof, by his genial presence, activity and perfect command of his faculties, that age is not measured by the Calendar. He is certainly the only living member of the 46 representatives of Orleans Parish, and as far as the Editor can ascertain, the only living survivor of the Convention. Quite apart from this rare distinction, the Society honored itself, at this meeting, by unanimously and enthusiastically electing Dr. Lewis to the Honorary Fellowship of the Society and presented him with the title and a citation that reflects the affection and esteem in which this eminent teacher and leader is held by his brethren of the profession and the people of New Orleans and Louisiana to whom he has devoted a life of generous professional and public service.

DISABLING SICKNESS AMONG INDUSTRIAL EMPLOYEES.

Statistics as to mortality rate in any given community are accessible and easily studied, yielding of course a tremendous amount of valuable information. On the other hand the phase of statistics which has not been gone into with any thoroughness is the study of disabling illnesses among workers in general industry. These statistics would be, if carefully and thoroughly compiled, of tremendous influence, because they might lead to preventative measures which would obviate the loss of time through illness.

The Public Health Service has been conducting such a study in the last few years. It is interesting to note the respiratory diseases cause 41.8 per cent of disabling illnesses; digestive diseases 13.7 per cent and non-industrial accidents 10 per cent. These three groups represent then practi-

cally two-thirds of disabling illnesses. In the respiratory group influenza and grippe accounted for nearly one-half in a seven year period of all the respiratory diseases. Diseases of the stomach, appendicitis and enteritis, as well as hernia were the most frequent numerically of the digestive diseases. Relatively high up in the statistics as a cause of disability was rheumatism.

It is of some interest to note that disabilities longer than eight days were 50 per cent higher among female than among male employees; that a low sickness rate was found among employees of iron and steel industries, although pneumonia was considered higher in this particular industry than the other industries represented in the statistics, and that the seasonal peaks of sickness were determined largely by the frequency of respiratory diseases, although the non-respiratory diseases as a group all showed greater prevalence in winter and early spring than summer and autumn.

A NEW EDITOR FROM MISSISSIPPI.

It is with very distinct feelings of regret that we have heard from the Mississippi State Medical Association that Dr. J. L. Ullman has been obliged to resign his position as Editor of the Mississippi Section of the New Orleans Medical and Surgical Journal. Dr. Ullman has found that it is impossible to carry the burden of editing his section of the journal in addition to the many outside activities he is engaged in, as well as conducting a busy and active surgical practice. As past president of the Mississippi State Medical Association and a distinguished Mississippian, Dr. Ullman has added prestige to the Editorial Staff of the Journal. He has also done much to further the purposes of the magazine and to make it a scientific journal of repute and value, as well as the medium for the expression of the ideas of the profession of the two southern states which it represents. Always an enthusiastic and hard worker, Dr. Ullman has

labored faithfully for the Journal. His resignation means a loss to the Journal which it will be hard to fill. Always he has been most faithful and cooperative in his editorial duties.

The regret that the Editorial Staff feels over the loss of Dr. Ullman is assuaged in part by hearing from Mississippi that Dr. Leon S. Lippincott is to become the editor representing this state. Dr. Lippincott is

one of the most active men in medicine in the state, he is a scientist and a writer of note, and it has been through his efforts largely that the very active Tri-Counties Medical Association has become one of the leading medical societies in Mississippi. We feel sure that the Mississippi House of Delegates has an extremely wise choice in their selection, and we feel sure that the Journal is most fortunate in this appointment.

HOSPITAL STAFF TRANSACTIONS

CHARITY HOSPITAL MEDICAL STAFF

MEETING, MAY 21, 1929.

The first group of cases was presented by Dr. M. T. Van Studdiford. A white female child, aged 12 years, was presented with a marked dermatitis over the arms, neck, trunk and eyelids. This had been present since the age of 5 months. The diagnosis was probably one of toxic dermatitis, though the skin tests were negative for all food sensitization. The next case was of a negro male adult. This patient presented a striking picture, the entire tip and wings of his nose being completely destroyed. The Wassermann was negative and the case was thought to be one of lupus vulgaris. Dr. Van Studdiford indicated his intention to try the use of gold salts in this case. The third case was a white male adult who one year ago began to complain of stiffness of the back. The skin over the right buttock was very thick, brawny and stiff. The blood chemistry showed N. P. N. 63, sugar 100; Wassermann negative. The diagnosis was sub-acute scleroderma. A section of the skin had been removed for section, and had shown chronic inflammatory tissue with infiltration. The cases were discussed by Drs. Ralph Hopkins, J. A. Devron and N. F. Thiberge.

Dr. J. G. Stulb then presented a case of meningitis, which he regarded as one of central nervous system lues. The spinal fluid had been negative for meningococcus. The serum was tried with no results. The patient was then placed on mercurial rubs, with reported remarkable results. During the course of the treatment the patient developed appendicitis and was treated surgically for this. The patient received 750 grains of mercury a day by rubbing for four days. In the discussion which followed Dr. F. L. Fenno stated in his opinion the mercurial rubs did not cure the supposed luetic meningitis. He called attention to the fact that the use of serum in cases of meningococcus meningitis may produce a positive Wassermann.

Dr. Ralph Hopkins presented the third group of cases. A colored male patient with a papular eruption of 25 years duration, which looked like a typical papular syphilid. Mixed treatment had been tried with no results. Two Wassermanns had been negative. The condition was regarded as one of multiple fibromata or an unusual Von Recklinghauser's disease. The patient had pigmented patches over the body and condyromata around the anus, which added to the confusion of the diagnosis.

WILLARD R. WIRTH, M. D.

HOSPITAL STAFF TRANSACTIONS VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL.

Staff Meeting, June 10, 1929.

Abstract: Trachelo-Hysterectomy. Dr. J. A. K. Birchett, Jr.

Patient: Colored, female, aged 17 years, married, farmer, admitted to hospital May 23, 1929.

Complaint: Pregnant, full term; has been in labor 48 hours. Midwife had been unable to deliver; physician called and applied forceps but unable to deliver. Another physician called in consultation and it was decided that patient was too shocked for further manipulation.

Past history: Not remarkable. Menstruation regular since age of 13; lasts four to five days. Last menstruation, August, 1928.

Physical examination: Temp., 101° F.; pulse, 120; respiration, 24. Short, fat, well developed and nourished, apparently acutely ill. Extremely shocked; complains of pains in lower abdomen which is distended to size of full term pregnancy. Vulva edematous and acutely tender to touch; passage of blood clots from vagina.

Procedure: As there was evidence that delivery was impossible through the birth canal, due to contracted pelvis and large baby, immediate

Cesarian section was decided upon. Because of previous manipulation and instrumentation with probability of infection, a procedure was chosen which would give more protection to the general peritoneal cavity than the usual operation through the fundus of the uterus. The operation of choice was the cervical Cesarian section after the method of Kroenig, with retro-vesicular or sub-peritoneal incision of the cervix. Patient was given 1,000 c.c. glucose solution intravenously, and under gas-ether anesthesia, a low median incision was made, bringing to view the cervical portion of the pregnant uterus. The vesical reflection was picked up and incised, after the upper portion of the wound had been carefully packed off from the upper abdominal cavity, to keep the flow of uterine contents from infecting the peritoneal cavity. The bladder reflection was then separated and pushed down with the bladder as in doing hysterectomy.

A vertical incision was made in the cervix, extending well down towards the external os, and the head of the child appeared. Forceps were applied and the child extracted. There was considerable bleeding after the delivery of the placenta, but none while incision was being made in the uterine wall. The hemorrhage was controlled by hot packs in the uterus while the incision was sutured. The dissected bladder and peritoneum were then placed in normal position, the peritoneum of the vesical reflection being sutured to the flap of the uterine portion, making the incision in the cervix extraperitoneal. The abdomen was closed without drainage.

Patient had a stormy convalescence for six days because of sepsis from infection during instrumentation, but there was no evidence of any general peritoneal infection. Glucose solution was given daily, mercurochrome solution was administered, and on the tenth day a blood transfusion. No donor had been available previous to that time. Temperature then dropped to normal and patient and child are well at this time.

Conclusion: If Cesarian section is to be performed in a case previously infected from attempted delivery, the low operation is always indicated as the best means of preventing general peritonitis, which may be caused by spilling of uterine contents into the peritoneal cavity when the incision is made through the fundus.

Abstract: Extensive Third-Degree Burns. Dr. H. H. Johnston.

Patient: White, female, aged 28 years, admitted to hospital March 16, 1929.

Complaint: Severely shocked. Two hours before admission while attempting to light a kerosene stove, which had been filled with gasoline

by mistake, stove exploded, saturating her clothes and burying her severely before her husband could extinguish the flames.

Past history: Chronic nephritis, nephrolithiasis, and hypertension during past six years. Two years ago had a ruptured appendix and gangrene of intestines; six inches of intestine were removed.

Family history: Not remarkable.

Physical examination: Temperature, 97.2° F.; pulse, 86; respiration, 18. Well developed but rather obese, obviously in extreme pain and in a state of shock. Pulse, weak; blood pressure, 140/110. The entire anterior surface of the chest and abdomen was burned to either a second or third degree depth. The entire surface of lower two-thirds of left forearm and hand was deeply burned, mostly to a fourth-degree. The right forearm and hand showed a second-degree burn. The anterior surfaces of both thighs, legs and feet were burned, ranging from a second- to a fourth-degree depth.

Blood examination: Leukocytes, 30,000; differential leukocyte count, small mononuclears, 3; large mononuclears, 7; polymorphonuclears neutrophils, 90; Wassermann and Kahn tests, negative.

Urine: Slight trace of albumin; numerous leukocytes and numerous fresh red blood cells.

Procedure: One thousand c.c. of glucose and saline solution was given immediately intravenously and repeated every twelve hours. Caffein sodium benzoate was given every three hours until patient had recovered from shock. Under aseptic conditions the larger blebs were punctured and the entire burned surface was sprayed with 1 per cent picric acid, repeated as soon as one application was dry for the following two days. Butysin picrate ointment was applied on light dressings over the more painful burns. On the third day after admission patient was placed under an electric baker and dressings were removed. Glucose was continued, 1,000 c.c. in the vein, daily for the following five days. The picric acid spray was continued daily with butysin picrate dressings over the raw granulating surfaces of the left breast, abdomen, thighs and knees.

Five weeks after admission skin grafting by the Reverdin method was started. The medical and anterior aspects of the left knee and lower thigh were first grafted. Ten days later the right knee, both thighs, abdomen and breasts were grafted by the same method.

At present practically all grafts have taken and are growing well.

TRANSACTIONS OF THE PRESBYTERIAN HOSPITAL CLINICAL SOCIETY.

The last meeting, until the autumn, was held on May 30, with Dr. John W. Lindner presiding as chairman. After the usual business, the deaths which had occurred during the previous month were discussed. These cases were liberally discussed by the staff, and a number of interesting points were brought out.

Following this, Dr. Loria presented a short paper on intracranial hemorrhages, and presented a case of middle meningeal hemorrhage, which had developed a right hemiplegia. This patient had been struck over the left ear with a golf ball. Over a period of six days he developed a right hemiplegia and loss of speech. At the end of this time he developed a typical epilepsy convulsion and was, accordingly, craniotomized. A large clot the size of a silver dollar and nearly 1 cm. in thickness was removed from the region of the pre-central gyrus and Broca's area. The patient made an uneventful recovery and regained all his functions and faculties.

The paper was liberally discussed, especially by Dr. H. R. Unsworth, who spoke on the neurological aspect of this subject; and Dr. Edwin Socola, who briefly, reviewed hemorrhages of this type in the new born.

FRANK L. LORIA, M. D.

TRANSACTIONS OF THE CHARITY HOSPITAL SURGICAL STAFF.

The regular monthly meeting of the surgical staff was held on May 15, with Dr. Graffagnino presiding as chairman. At the end of the meeting it was decided to suspend all meetings of the section for the summer months.

After the usual business the section was presented with and discussed elaborately, three very interesting cases. These cases were picked from the deaths which occurred in the surgical departments during the month of March.

The first case was that of a colored female, 18 years of age, who was edematous all over. Her condition had been very carefully studied in

the medical wards of the hospital, and sometime after her admission it became necessary to transfer her to the surgical services. Here a decapsulation of both kidneys was done under spinocain anesthesia. It was of interest to note, however, that after one kidney was decapsulated, the patient was turned to the other side, and it became necessary to administer ethylene. This latter side of the patient had remained unanesthetized. In the discussion which followed, it was brought out that the spinocain was of the light variety, and as the patient had probably not been permitted to lie on her back, the anesthesia only affected those roots on the side first operated. The patient improved for a while, but the condition recurred and she died about one month after operation.

Case number two was that of a colored male, 15 years of age, who was admitted to the hospital with symptoms very closely simulating those of a subacutely perforating gastri ulcer. In fact, even the x-ray department concurred in the opinion. However, exploration failed to reveal any such pathology; and after removal of the appendix nothing more was done. The patient developed symptoms of general peritonitis after the exploration, and died. This case was also operated under spinocain anesthesia. It must be added that the only pathology found was a dilated duodenum. This case provoked some discussion of interest. It was opined that this might have been a case of congenital syphilis, and that the patient had gastric crises, very much simulating gastric ulcer.

Another very interesting case was that of a white male, 43 years of age. This patient was admitted to the hospital following at three weeks' illness at home. On admission he was carefully studied, and a little later explored. The patient left the table in very poor condition and died soon after reaching the ward. A study of his blood picture showed a leucopenia with a neutrophilic count of 84 per cent. The Widal test was also positive. Autopsy revealed a perforation of the small intestine. In the discussion which followed, it was thought this might have been a case of perforation of a typhoid ulcer.

FRANK L. LORIA, M. D.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of June, besides the regular meeting of the Board of Directors, the Society held one joint clinical meeting with the Charity Hospital Staff and one regular scientific meeting.

At the clinical meeting cases were presented by Drs. Homer Dupuy, I. M. Gage and Alton Ochsner.

At the scientific meeting papers were read and discussed as follows:

The Significance and the Limitations of the Radiogram in the Diagnosis of Oral Sepsis.

By.....Dr. Sidney L. Tiblier

Discussed by Dr. Lucien A. Fortier

Cesarian Section in New Orleans 100 Years Ago.

By.....Dr. A. E. Fossier

Discussed by Dr. E. L. King

The following doctors were elected to active membership in the Society:

Drs. E. Z. Browne, F. W. Dirmann, Ben R. Heninger and David R. Womack.

During the past month two members died. Dr. Albert R. Thomas and Dr. Ernest B. Weinfeld.

The thirty day grace period on the group insurance will expire July 3rd. The members are requested to send in their checks for this insurance not later than the above date in order that we may send the Society's check to the home office on the due date.

An organization meeting of the New Orleans Chapter of the Woman's Auxiliary was held on Thursday, June 27, at the Hutchinson Memorial Building.

The members of the Society are requested to send in their pictures for the history of the Orleans Parish Medical Society.

TREASURER'S REPORT.

Actual Book Balance, April 30.....	\$964.32
Receipts for Insurance.....	1,292.49
Receipts during May.....	481.86
	<hr/>
	\$2,738.67
Expenditures in May.....	477.94
	<hr/>
ACTUAL BOOK BALANCE.....	\$2,260.73

LIBRARIAN'S REPORT.

Fifty-three books have been added to the Library during May. Of these 34 were received by gift, 7 by binding and 12 from the New Orleans Medical and Surgical Journal. A list of new titles of recent date is appended.

A list of Journal wants to complete files is being prepared and we hope to make an intensive effort to complete and bind as many of these files as possible in the near future.

Donors of the month are as follows:

Dr. H. R. Unsworth.

Hoagland Laboratories, Brooklyn.

Vanderbilt University School of Medicine Library.

St. Louis University School of Medicine Library.

University of Illinois College of Medicine Library.

Kings County Medical Society Library.

Medical College of the State of South Carolina.

University of Nebraska College of Medicine Library.

Dr. W. A. Pusey.

College of Physicians, Philadelphia.

Government Printing Office.

NEW BOOKS.

Ambard—La reserve alcaline. 1928.

Connor—Surgery in the Tropics. 1929.

Brain—Recent Advances in Neurology. 1929.

Evans—Spinal Anesthesia. 1929.

Kaufmann—Pathology. 3 v. 1929.

Harvey—DeMotu Cordis—Leake Translation. 1928.

Gradwohl—Blood and Urine Chemistry. 1928.

Maranon—Climacteric. 1929.

Pettinari—Grefe Ovarienne et Action Endocrine. 1928.

Bass & Johns—Laboratory Diagnosis. 1929.

U. S. Child Welfare Service—Child Welfare Extension Service. 1929.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

NEXT ANNUAL MEETING OF STATE MEDICAL SOCIETY.

The 1930 Annual Meeting of the Louisiana State Medical Society will be held in Shreveport, April 29, 30 and May 1. Dr. J. M. Bodenheimer, of Shreveport, has been selected by the Shreveport Medical Society to serve as Chairman of the Committee on Arrangements for the above meeting.

CHAIRMEN OF SECTIONS.

The following Chairmen of Scientific Sections for the meeting of the Louisiana State Medical Society, Shreveport, April 29, 30 and May 1, 1930, have been appointed by the President:

Medicine and Therapeutics—Dr. Robert G. Douglas, Shreveport.

Pediatrics—Dr. J. A. Crawford, Lake Charles.

Nervous Diseases—Dr. J. Dalton Young, Shreveport.

Bacteriology and Pathology—Dr. L. A. Hebert, Lake Charles.

Public Health and Sanitation—Dr. Marvin Cappel, Alexandria.

Gastro-Enterology—Dr. J. W. Faulk, Crowley.

General Surgery—Dr. Jas. T. Nix, New Orleans.

Gynecology and Obstetrics—Dr. Lucien A. Le-doux, New Orleans.

Eye, Ear, Nose and Throat—Dr. Jules Dupuy, New Orleans.

Urology—Dr. Edward McCormac, New Orleans.

Radiology—Dr. Leon J. Menville, New Orleans.

Orthopedic Surgery—Dr. H. Theodore Simon, New Orleans.

Those desirous of reading papers should communicate with the various Chairmen as promptly as possible. The program for each Section must be in the hands of the Secretary-Treasurer not later than February 28, 1930.

ST. LANDRY PARISH MEDICAL SOCIETY

Opelousas, Louisiana.

May 27, 1929.

Editor, New Orleans Medical and Surgical Journal,

1551 Canal Street,

New Orleans, La.

Dear Sir:

The following resolution was adopted unanimously by the St. Landry Parish Medical Society at a meeting of that Society on May 22,

1929. In accordance with the terms of this resolution a copy of the resolution is now being sent to the persons and institutions mentioned in the last section of the resolution:

"Whereas, it hath pleased an All-Wise Providence to remove from our midst the following members of the St. Landry Parish Medical Society:

Dr. Theo. T. Tarlton, of Grand Coteau;

Dr. Abbe C. Durio, of Arnaudville;

Dr. G. W. Martin, of Arnaudville;

"Resolved, That, while we deplore the severance of all earthly ties, we bow in humility to the fiat of fate, in the hope that our deceased brethren have been translated to a sphere where sorrow and pain are no more, where they may awake to a realization that:

"There is no death! What seems so is transition;
The life of a mortal breath
Is but a suburb of the life Elysian,
Whose portal we call earth."

Further resolved, That this be spread on the minutes and copies sent to the families of deceased, to the St. Landry Clarion, Herald, Era, St. Martin Banner and Messenger, and the Official Journal of the State Medical Society.

WILSON W. KNOWLTON, M. D.,

Secretary-Treasurer, St. Landry Parish Medical Society.

Dr. O. W. Bethea, Professor of Therapeutics in the Graduate School of Medicine of The Tulane University of Louisiana, delivered the commencement address at the graduation exercises of Emory University of Atlanta, between June 7 and June 11, 1929.

Dr. Henry Daspit, Dean and Professor of Psychiatry of the Graduate School of Medicine, and Professor of Neurology and Psychiatry of the School of Medicine, The Tulane University of Louisiana, attended the meeting of the American Neurological Association held at Atlantic City the week beginning May 27, 1929.

Assistant Surgeon C. J. Van Slyke. Relieved from duty at Marine Hospital, New Orleans, La., on June 1, and assigned to duty at Marine Hospital, Detroit, Michigan.

THE SAMUEL D. GROSS PRIZE

Fifteen Hundred Dollars

Essays will be received in competition for the prize until January 1, 1930

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the competitor who receives the prize shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of

the College of Physicians, 19 S. 22d St., Philadelphia," on or before January 1, 1930.

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays, if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

WILLIAM J. TAYLOR, M. D.

JOHN H. JOPSON, M. D.,

EDWARD B. HODGE, M. D.,

Trustees.

Attention is called to the new advertisement of Hoffman-LaRoche Co., Inc., with changed address and title.

PERMANENT RESULTS OF EMERGENCY RELIEF—An official of the United States Public Health Service has said that there have been two floods of late in the Mississippi Valley, one the inundation of 1927 and the other a flood of public health development through the creation of county health organizations staffed by full-time doctors, sanitary inspectors, and nurses.

Before the American National Red Cross and other agencies had completed an unusually well-organized and efficient emergency campaign for the rescue, protection, and assistance of the thousands of flood sufferers of seven states, a conference of representatives of the United States Public Health Service, the departments of health of the states concerned, the American National Red Cross, and the Rockefeller Foundation was held in New Orleans. A cooperative plan was worked out for the creation of full-time health organizations in the 100 counties which had been affected by the flood. Each agency pledged a contribution towards a total sum which, with local contributions, would provide the necessary support.

This attempt to capitalize a disaster for permanent progress has been gratifyingly successful. In 1928 eighty-five of the 100 counties maintained

full-time health organizations. Not one slipped back to the old part-time plan. Reports show that a large amount of constructive health work was done in sanitation, in reporting and control of communicable diseases, in maternal, infant, and school hygiene, and in health instruction of the public. Of the total cost of maintaining these organizations the Rockefeller Foundation bore nearly one-quarter.

But more than money was needed to organize the eighty-five counties. Competent men and women with knowledge, wisdom, and loyalty were essential. A certain number of trained or experienced persons were available. Others were lent for a time by state and city health departments until permanent appointees could be found. Even so, many posts were vacant. The burden of giving a short intensive training to men and women who offered themselves for local health service, especially in the flooded area, was assumed by the Foundation. Since July 1, 1927, at two field stations, one at Indianola, Mississippi, and the other at Greenville, Ohio, 72 physicians, 102 nurses, and 105 sanitary inspectors have taken this training at a cost to the Foundation of \$43,625.66. —Information Service of the Rockefeller Foundation.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

S. Lippincott, M. D., Associate Editor

The Tate County Medical Society held its regular meeting on June 5, with the following program:

Eye Conditions Frequently Met in General Practice—Dr. H. W. Qualls.

The Preventative and Curative Treatment of Diphtheria and Scarlet Fever—Dr. Gilbert Levy.

Some Causes for Prolonged Labor—Their Management—Dr. W. T. Pride.

Surgical and Non-Surgical Goitre—Dr. J. A. Crisler, Jr.

Sudden Heart Failure—Dr. Whitman Rowland.

Dr. H. L. Murphey was selected to arrange a program for the next meeting of the society on August 7.

Dr. M. H. McRae, of the McRae Hospital and Clinic, Corinth, is enjoying a vacation of a few weeks on the Gulf.

Dr. W. W. McRae, Superintendent of the McRae Hospital and Clinic at Corinth, is leaving soon for a vacation in the Northwest. While away, he will attend the meeting of the American Medical Association in Portland, Oregon.

The Mississippi Methodist Orphan's Home at Jackson has a finely equipped hospital department of six beds, with sanitary tables, roller chair, bath room, laboratory and a complete set of china for exclusive hospital use. The main room may be used for a sun parlor. The hospital can be completely closed from the main building should contagious diseases occur. Rev. B. F. Lewis is superintendent and Dr. D. W. Jones is house physician.

Dr. Paul S. Carley, health officer, with headquarters at Belzoni, has resigned to take a position in Jamaica. Dr. Carley has been most successful and has the well wishes of the Delta Medical Society. Dr. W. W. Scott, of Jackson, will take over the work of Dr. Carley.

Dr. E. S. Roberts, house physician at the South Mississippi Charity Hospital, has resigned to enter private practice.

Dr. Temple Ainsworth, formerly house officer with Dr. R. H. Crawford, is now a member of the Staff of the South Mississippi Charity Hospital.

Dr. Louis M. Magee, formerly of Touro Infirmary, is now house officer at the South Mississippi Charity Hospital.

Dr. R. H. Foster, superintendent of the South Mississippi Charity Hospital, attended the inter-

national convention sponsored by the American Hospital Association, at Atlantic City, June 13 to 21.

The South Mississippi Medical Society met at Laurel on June 13.

The following from an honored former president of the Association is of interest:

"J. S. Ullman, M. D.,

"Natchez, Miss.

"Dear Dr. Ullman:

"Having been confined to my home for two and a half years from paralysis and a fractured hip, I have been denied the privilege of attending our state medical association, which I very much regret. However, I am not unmindful nor unappreciative of 'sympathy and good wishes' extended to me by 'wire and letters' from the association at large and the club of 'ex-presidents.' Our association, I think, is one of the best in the South and is the peer of any. I expect it to go onward and upward into the higher realms of achievement for the good of humanity. May the 'Great I AM' bless each one and may we all, at last gather around the 'Great White Throne' and discuss matters for the future welfare of our kind who are or will be still on earth.

"I remain, sincerely,

(Signed) "J. W. YOUNG,
"Grenada."

Dr. B. D. Blackwelder, who has been ill in the Natchez Sanatorium, is reported to be well on the road to recovery.

A son, William Burns Stowers, was born to Dr. and Mrs. W. K. Stowers on May 22.

The Pike County physicians have withdrawn from the Tri-County Medical Society and were granted a charter at the meeting of the State Medical Association in May. The members of the Tri-County Society wish them "God-speed."

The Tri-County Society, now composed of physicians of Copiah, Lincoln, Walthall and Lawrence Counties, met June 11 at Monticello. A "fish-fry" preceded the program, which was as follows:

Intussusception—Dr. A. B. Harvey, Tylertown.

Spastic Colon—Dr. D. T. Langston, New Hebron.

Prophylaxis During Labor—Dr. W. M. Biggs, Osyka.

Dr. B. S. Waller, of Silver Creek, is president of the society, and Dr. J. R. Markette, of Brookhaven, is secretary.

The King's Daughters Hospital at Brookhaven was inspected by a representative of the American College of Surgeons recently, and is expected within a few months to be admitted as a fully accredited hospital. Dr. W. H. Frizell is chairman of the staff; Dr. G. S. Ramsey is vice-chairman and Dr. O. N. Arrington is secretary. Monthly meetings of the staff are held with regular programs and a full discussion of the work of the institution.

Dr. J. M. Dampier, of Crystal Springs, member of the State Board of Health, is fast regaining his health and resuming office practice. He returned from the Mayo Clinic late in April.

Dr. F. J. Underwood, Executive Officer of the State Board of Health, and his wife, have the sympathy of the members of the Association in the illness of their daughter.

Dr. Hugh Haralson Johnston and Miss Hazel Deloach Pond, both of Vicksburg, were married on June 20. A reception in the new Hotel Vicksburg followed the ceremony. Dr. Johnston has been house physician at the Vicksburg Sanitarium for the past year. He is the son of Dr. Sidney W. Johnston, a past president of the State Medical Association.

Dr. H. C. Denson, formerly of Vicksburg, has entered practice at Newellton, La.

The Tate County Medical Society held its April meeting at Senatobia with the following program:

Conservative and Radical Surgery of the Sinuses and Mastoid—Dr. W. L. Howard.

The Value of Spinal Fluid in Clinical Examinations—Dr. R. C. Bunting.

Conservative Treatment of Osteomyelitis in Children—Dr. E. T. Lipscomb.

Myxedema—Dr. Lyles Motley.

Treatment of Chronic Diseases of the Nasal Accessory Sinuses—Dr. W. L. Simpson.

After the program several cases were presented, and refreshments were enjoyed.

Visitors: Drs. W. L. Howard, R. C. Bunting, W. L. Simpson, E. T. Lipscomb, and Lyles Motley, of Memphis; T. M. Dye, D. V. Galloway and J. B. Mitchell, of Clarksdale; George H. Wood and W. C. Lester, Batesville; T. P. Hall, Nashville; A. P. Alexander, Como; Jim Williams and B. R. Scott, Dentists, Senatobia.

Dr. W. D. Smith is president of the society and Dr. J. Sidney Easton is secretary.

At the regular monthly meeting of the Staff of the Vicksburg Sanitarium and Crawford Street Hospital the following Special Case Reports were presented:

Enlarged Thymus in the Newborn—Two cases—Dr. G. M. Street.

Trachelo-hysterotomy—Dr. J. A. K. Birchett, Jr.
Chorea—Dr. L. J. Clark.

Extensive Third-Degree Burns—Dr. H. H. Johnston.

At the regular meeting of the Issaquena-Sharkey-Warren Counties Medical Societies, held on June 11, the following scientific program was enjoyed:

Mercurial Poisoning from Kidney Lavage with Mercurochrome—Dr. Guy P. Sanderson, Vicksburg.

Notes on Whooping Cough—Dr. G. W. Gaines, Tallulah, La.

Angina Pectoris vs. Coronary Thrombosis—Dr. L. J. Clark, Vicksburg.

The annual meeting of the Mississippi State Medical Association to be held in Vicksburg in 1930 and the annual meeting of the Society in December were discussed and preparations for these two events will begin immediately.

The Society adopted resolutions opposing the proposed increased tariff on surgical instruments.

Dr. S. W. Johnston presented an interesting report of the recent meeting of the State Medical Association, and presented some rather startling information in regard to the interest of Mississippi physicians in the Journal of the American Medical Association, as follows:

I wish to bring before the Society tonight a matter which really belongs to the entire Medical Fraternity of Mississippi, and that is the unenviable position that the Mississippi physicians occupy in reference to fellowship in the American Medical Association. First, I want it understood that I am in no way connected with the publication of the Journal of that Association nor am I soliciting subscriptions for that Journal. My only reason in bringing this matter before the Society tonight is my humiliation in learning that Mississippi has the lowest percentage of subscribers to the Journal and the lowest percentage of fellowships in the American Medical Association of any state in the Union. There are approximately 1,680 physicians in Mississippi; of this number 1,020 belong to the Mississippi Medical Association in 1928; 344 are fellows of the American Medical Association. Of the 1,680 doctors in the state 542 subscribed for the Journal. Of the 660 men in Mississippi who do not belong to the Mississippi Medical Association 198 of them subscribed for the Journal. This is not quite 30 per cent. Of the 1,020 doctors who belong to the Medical Association 344 take the Journal which is approximately 33 per cent, so really after all the men who are not members of the Mississippi Medical Association are almost as much interested in what is happening in the medical world as those who are members. Of the 1,680 physicians in

Mississippi only 32 are interested enough in Medicine as to take the leading Medical Journal of the world. I hold in my hand this week's issue of the American Medical Journal. There are 116 pages of advertising matter and 87 pages of medical news. This Journal comes every week and covers practically all the medical news of the world. The price is less than ten cents a week, not quite one package of cigarettes costs you. Don't you think that when 32 of the physicians in Mississippi are interested enough in medicine to subscribe to the Journal it is humiliating and embarrassing to those who have the interest of the profession at heart? I hate to compare Mississippi with New Jersey and North Dakota with 77 of the physicians taking the Journal with Minnesota 75, Illinois 74, Wisconsin 72, and Connecticut and Arizona 71. It does seem to me that we ought to raise ourselves from the lowest position to at least the next to the bottom. Let us make a conservative effort to have every physician subscribe for the Journal of the American Medical Association.

At the meeting of the staff of the Mississippi State Charity Hospital, Vicksburg, held June 13, the following officers were elected:

Chairman, Dr. B. B. Martin, Vicksburg; First Vice-Chairman, Dr. W. C. Pool, Cary; Second Vice-Chairman, Dr. C. L. Green, Utica; Secretary, Dr. H. C. Dilworth, Vicksburg; Executive Committee, Drs. L. J. Clark, C. J. Edwards and Vincent Bonelli, all of Vicksburg.

The staff voted to meet on the thirteenth of each month.

In making his report for the first year of the hospital under his supervision, Dr. A. J. Podesta, Superintendent, told of the improvements which had been made, including a new motor ambulance, new sterilizing battery for the operating room, new complete x-ray equipment, children's ward, new kitchen range, general repair of lighting, plumbing and steam heating systems, new instruments and surgical supplies for the operating room, and a new nurses' home with 17 rooms, now about one-third completed.

Scientific papers presented:

Pyelitis in the New Born—Dr. Vincent Bonelli.

Discussed by Drs. W. H. Hamley, Lake Providence; B. B. Martin, Vicksburg; W. C. Poole, Cary, and A. J. Podesta, Vicksburg.

Spinal Anesthesia—Dr. H. C. Dilworth.

Discussed by Drs. P. S. Herring, L. J. Clark, B. B. Martin and A. J. Podesta, all of Vicksburg.

The Central Medical Society held its regular May meeting on the twenty-first at Jackson. Dr. T. P. Sparks read a very excellent paper on "A - thritis," which was generally discussed. Dr. Henry Boswell gave an interesting talk on the "Non-

Tubercular Diseases of the Lungs With Special Reference to Differential Diagnosis."

A number of members made brief talks on different phases of the recent State Medical Association meeting. They had been especially appointed in advance to take notes on the different aspects of the work, and the scientific papers at Gulfport, and their reports constituted a resume of that program which proved to be most interesting.

The June meeting of the Central Medical Society was held on the eighteenth at Jackson. The physicians of the Insane Hospital had charge of the program and presented special papers along the line of their work. Dr. Mitchell told of the plans for the new and greater hospital; Dr. Miller spoke on "Toxic Psychoses"; Dr. Banks spoke on "Psycho-Neuroses," and Dr. Monroe brought out the importance of early diagnosis of pellagra.

The average attendance at these meetings is about fifty and there is never any lack of snappy discussions.

The Tri-County Medical Society held a good meeting at Monticello on June 11, with the largest attendance in years, good essays and free and constructive discussions. The Society appointed the vice-president from each county to be official reporter of all news of interest to the profession for the Journal.

At a regular meeting of the Staff of the Natchez Sanatorium, on June 11, 1929, the following officers were elected:

Dr. J. W. D. Dicks, President.

Dr. Marcus Beekman, Vice-President.

Dr. W. K. Stowers, Secretary.

Executive Committee:

Dr. J. S. Ullman.

Dr. R. D. Sessions.

Dr. L. S. Gaudet.

Dr. and Mrs. H. S. Goodman, of Cary, attended the graduation of their son, H. B. Goodman, at Tulane. He won a Charity Hospital internship.

Dr. J. B. Benton, of Valley Park, recently lost his office and all its contents by fire.

Dr. M. J. Few, of Rolling Fork, recently installed a small x-ray outfit in his office.

Sharkey County under the supervision of Dr. A. K. Barrier, Health Officer, will hold a pre-school clinic at Anguilla on June 20.

The daughter of Dr. and Mrs. L. E. Martin, of Anguilla, who graduated from M. S. C. W. this year, is spending a part of the summer in Europe.

BOOK REVIEWS

History of Medicine: By Fielding H. Garrison, A. B., M. D. Philadelphia. W. B. Saunders' Company. 4th Edition. 1929. pp. 996.

The fourth edition of the best one volume book on the history of medicine contains considerable new matter which has been added since the last edition (1922). The general format and arrangement of the book has been unchanged, but new illustrations have been added as well as considerable extension on the section the modern period. It is very interesting to observe the increased interest that is taken by the medical profession in medical history since the first edition of Garrison's book. There seems to be a revival of the cultural phase of medicine, credit for which must be given almost entirely to Dr. Garrison.

J. H. MUSSER, M. D.

Manson's Tropical Diseases: A Manual of the Diseases of Warm Climates: Ed. by Philip H. Manson-Bahr, D. S. O., M. A., M. D., D. T. M. and H. Cantab, F. R. C. P. Lond. 9th ed. rev. New York. Wm. Wood and Co. 1929. pp. 921.

It is always a pleasure to review this standard manual of tropical medicine. A comparison of each new edition with the previous one provides an excellent perspective of the recent progress in this important field. While much has been done in recent years in the epidemiology and prophylaxis of the diseases of warm climates, Dr. Manson-Bahr lays particular emphasis in this edition on the therapeutic aspects of the subject, "in recognition of the paramount position that clinical study and clinical methods still hold." In other words, the happy days has not yet come when the clinician can become a hygienist and sanitarian pure and simple. Thus the greater part of the new material, incorporated into the new edition, is devoted to diagnosis and treatment.

Among the newer contributions to tropical medicine which the author has found to be sufficiently accepted to incorporate into the manual are the following: the newer information on the histopathology and treatment of kala azar, and the new clinical entity "dermal leishmanoid"; the recent contributions to beri beri; the more standardized differential diagnosis between bacillary and amoebic dysenteries and their treatment, with particularly fine color plates of cellular exudate in the two infections; the etiology of verruga peruviana; recent additions to leprosy; the more recent cumulative evidence of the relationship between malaria and blackwater fever; the new hosts of typhus in South Africa; the

biologically different strains of the undulant fever organism (*Brucella abortus*); the radiological diagnosis of urinary schistosomiasis; and recent clinical data on leprosy and yaws. The author is apparently not ready to accept the view that tertiary yaws and syphilis are of the same origin. The proof that the yellow fever organism is a filterable virus has required a restatement of the views expressed on this subject in the previous addition.

The author has retained the valuable appendix on MEDICAL ZOOLOGY, to which a few additions have been made, notably on the life cycles and intermediate hosts of *Clonorchis sinensis* and *Acanthocheilonema perstans*. In the reviewer's opinion, however, space could be saved and the material better coordinated if this appendix were discontinued and the important data incorporated in the body of the book. Likewise certain paragraphs relating to the non-human protozoa (pp. 701-706) could be omitted without injury to the manual.

The following nomenclatural and nosographic errors have been noted by the reviewer: (1) the use of the term "*Loxotrema ovatum*" for *Metagonimus yokogawai*; (2) the use of the term *Physaloptera mordens* instead of *P. caucasica* and (3) of *Giganthorhynchus gigas* instead of *Macracanthorhynchus hirudinaceus*; (4) the use of the term *Filaria bancrofti* in place of *Wuchereria bancrofti*; (5) the statement that kala azar occurs in Japan, where it has never been found, and (6) the reference which is made in all manuals of tropical medicine that lung fluke infection occurs in China, although no single endemic infection has been seen in that country. However, the citations as a whole are quite accurate and the nomenclature modern to a degree not usually found in a clinical text.

With only an increase of 26 pages (895 pp. in the 8th edition, 921 pages in the present edition) a very considerable amount of new data has been added. The reviewer marvels at the way in which this has been done. Equally impressive with the additions to the text are the new illustrations, consisting of 4 color plates, 5 full-page half tones, 14 text figures, and one chart. A few of the less important illustrations of the previous editions have been omitted without harm to the book. The volume is of readily usable desk size and is substantially bound. The price (\$11.00) is rather steep. Altogether this new addition is a valuable hand-book for any practitioner in warm climates.

ERNEST CARROLL FAUST, Ph. D.

Grefte ovarienne et Action endocrine de l'ovaire:

By Vittorio Pettinari. Gaston Doin. 1928.
pp. 487.

This is an extensive treatise representing a very detailed and laborious research on the ovary and the physiological action of the hormones on various organs. The author gives a detailed account of experimental grafts, auto- or homoplastic in dogs, rabbits, rats, guinea pigs, monkeys, etc.

The reviewer can scarcely even attempt a comprehensive abstract of such a voluminous work, but can only permit himself a word of commendation and admiration for the patience and diligence of the author in such a tremendous undertaking, resulting in a very interesting and instructive volume.

ADOLPH JACOBS, M. D.

Pediatrics for the General Practitioner:

By Harry Monroe, A. M., M. D. Philadelphia,
J. B. Lippincott Company. 1929. pp. 606.

The book is printed with a type that is very restful to the eye. There are many illustrations that serve well to make the subject matter clearer but like most textbooks of today there are many hackneyed ones that serve but little to aid the reader to comprehend the subject under discussion. The author gives credit to the men whose cases he cites. The spirit is excellent but the average reader is unacquainted with them and the reviewer feels they might be omitted. The author takes up treatment a little more fully than most textbooks and at the close of some of the discussion on treatment there are some very useful prescriptions which the general practitioner always welcomes. At the close of each chapter is a list of references which is always welcome and serves well for those interested in delving deeper into the subject.

This book will serve as a useful reference for the busy practitioner interested in pediatrics. The author and the other men who assist him in this book have the practitioner in mind and in all have admirably accomplished this. Even the specialist in pediatrics will derive a good deal from reading this book. However, the author did not have the specialist in mind and therefore he will find many of the subjects considered by him as important treated very lightly.

JULIAN GRAUBATH, M. D.

What Is Life?: By Augusta Gaskell. Springfield, Ill., Charles C. Thomas. 1928. pp. 324.

In this book the author treats of an old and much discussed subject from an entirely new angle, and presents a theory of life and evolution that is unique in many respects. The theory is

built directly upon atomic physics, a field which most biologists are more or less unfamiliar. The hypothesis has many elements of originality and differs widely from previous explanations of the origin of life. An outstanding quality of the author's new concept is that it is subject to experimental test, an unusual feature of theories on this subject.

Whether or not this idea of life will meet with the approval of biologists, reared, as most are, on chemical and morphological explanations, is problematical, but at any rate the new view point is most welcome.

Criticism of this theory can come only from those acquainted with both biology and atomic physics, namely, the bio-physicists. On them, also, will fall the burden of finding the proof.

The book furnishes considerable food for thought and seemingly should stimulate research in the field of bio-physics.

There are two introductions, one by Karl T. Compton, and the other by Raymond Pearl. A glossary of technical terms used is appended.

IRVING E. GRAY, Ph. D.

Old Age: The Major Involution:

By Alfred Scott Warthin. Ph. D., M. D., LL.D. New York, Paul Hoeber, Inc. 1929. pp. 199.

This monograph is an excellent exposition of a very important and interesting subject. The author's learned view of the question; his philosophy concerning old age; his review of the theories of senescence; his expose of the fallacy and foolishness of the methods of rejuvenation are convincing, clear and forcible and denotes much study and practical experience with this matter. The biologic periods of human life are given and the characteristic changes occurring in them are enumerated.

I. L. ROBBINS, M. D.

La Reserve Alcaline: By L. Ambard and F. Schmid. Paris, Gaston Doin et Cie, 1928. pp. 154.

In the present study of M. M. Ambard and Schmid have given a brief synthesis of a number of articles concerning the alkaline reserve together with interesting personal observations. The work is divided in two parts, one physiological, the other pathological. Part I deals first with processes involved in the genesis of the alkaline reserve in vitro and afterwards with the demonstration of the intervention of respiration and of the renal secretion in the regulation of the alkaline reserve.

In part II are considered the variations of the alkaline reserve especially in Diabetes, Nephritis, Puerperal eclampsia and Anesthesia. In diabetes and uraemia, although the fall in the alkaline reserve is the usual interpretation of acidosis, there are instances, not infrequent, of patients whose alkaline reserve is normal in the presence of marked acidosis. This is especially true in cases of uremia. Under normal conditions the respiratory centers are excited by their normal charge of HCL. In diabetic acidosis, the excess of diacetic and oxybutyric acids acting on the blood chlorides increase the charge of HCL in these centers with their consequent hyperexcitability manifested by increased pulmonary ventilation fall in the CO₂ content of the blood and reduction of the alkaline reserve. From this mechanism however, the authors present a possible variation from the usual course of events: for instance, if in a given patient, for some reason, the blood chlorides should become reduced, the picture change completely: since the quantity of HCL in the respiratory centers depends on the quantity of blood chlorides, a reduction of chlorides in the blood will inevitably counteract the effects of diacetic and oxybutyric acid retention. Under these circumstances, a normal or still higher alkaline reserve will prevail regardless of the decided acidosis.

In nephritis the alkaline reserve remains normal in the forms of nephritis which the French call *hydropiginous*, i. e., nephritis with edema, in which there is no urea retention. In Azotaemic nephritis, so named by Widai, on account of the constant rise in the blood urea, the alkaline reserve is lowered. In the former group, as there is no accumulation of acids in the blood and as the blood chlorides remain well within normal limits, there is no excess of acids in the tissues, consequently there is no cause for hyperactivity of the respiratory centers and the alkaline reserve remains normal. In azotaemic nephritis there seems to be good reason to suspect the presence of acid in the blood, probably HCL. The wide variations of the alkaline reserve depend on corresponding variations in the levels of blood chlorides.

The authors make a decided distinction between chloride retention and sodium retention, hydration or dehydration following respectively retention of either of the two elements; hydration that of sodium, dehydration that of chlorine. In nephritis with edema, sodium is found in combination with chlorine as sodium chloride, in nephritis without edema, chlorine is found in combination with albumins as hydrochlorate of protein, which means an excess of HCL in the albumins; a hyperchloraemia with a deficiency of sodium which the authors describe as "dry chlorine

retention", the condition prevailing in nephritis without edema. In dry chlorine retention the kidneys have lost the essential function of retaining the bases and of eliminating the acids: an excess of chlorine is retained and an excess of sodium eliminated. Hence the beneficial effects of a salt-free diet, manifested by a rise in the alkaline reserve, a fall in blood pressure and relief of convulsions which result from excess of HCL in the nervous centers.

In Puerperal Eclampsia, the authors consider the pathogenesis as an acidosis and not a toxæmia, as evidenced by an excess, relative or absolute, of the chlorine charge of the red blood cells which is a decided indication of an excess of HCL in the tissues, causing a fall in the alkaline reserve, hypertension and convulsions. To the incrimination of lactic acid which some authors have attempted to suggest as a cause of puerperal eclampsia, the authors counter that the production of excessive amounts of lactic acid is not the cause, but the result of muscular hyperactivity. Another evidence that the offending acid is HCL is the improvement observed by many obstetricians following a salt free diet in puerperal eclampsia.

Regarding Anesthesia, the authors discuss the danger of inhalation of oxygen or artificial respiration, dangers which are caused by increasing the paucity of CO₂ in the body thereby diminishing the excitation of the respiratory centers already depressed by the anesthetic. They emphasize the well-recognized advisability of performing artificial respiration or the inhalation of oxygen with the addition of a decided percentage of CO₂ to the inspired air or to the oxygen.

To those who wish to study and analyze the variations of the alkaline reserve in physiologic and pathologic problems the work of M. M. Ambard and Schmid will be of decided usefulness.

H. BAYON, M. D.

Treatment of Venereal Disease in General Practice: By E. T. Burke, D. S. O., M. B., Ch. B. (Glas.), New York, Oxford University Press, 1927. pp. 162.

Burke evidently intended his book to be used by men practicing in Great Britain or The British Possessions as most of his drugs are British produced and their names do not sound familiar.

If we are to believe his statement that, "Mercury is found experimentally to have no action upon the *treponema pallidum* in amounts short of the lethal dose," we will have to attribute the benefits obtained, before salvarsan and bismuth were discovered, to some other cause.

He very forcibly explains that Syphilis in children is congenital and not hereditary.

In his treatment of gonorrhea he is a firm believer in the intravesicle irrigation by the physician for the acute anterior infections as well as the older cases, and recommends vaccines as a routine, strongly advising against the use of a hand-syringe by the patient.

MONROE WOLF, M. D.

Healthy Growth: By Alfred A. Mumford, M. D.
New York Oxford Medical Publications, 1927.
pp. 384.

The author of this excellent book desires to attack the problem of healthy growth from a different angle from previous methods. The author has in mind the adolescent school boy, whom he feels has not been properly equipped for the great perplexities of later life. He attributes this failure to our possession of inadequate standards of healthy growth, both from the physical and mental standpoint.

Throughout the book, the author endeavors to substantiate his arguments by many elaborate experiments and complicated charts of what he thinks are standards. It is the reviewer's opinion that much of this could be condensed. However, anyone desiring exhaustive information along lines of physical and mental development is recommended to read this book, as it is undoubtedly written in a most delightful style.

JULIAN GRAUBARTH, M. D.

The Climacteric: By Gregorio Maranon; Translated by K. S. Stevens and edited by Carey Culbertson, A. B., M. D., F. A. C. S. First American edition from second Spanish edition. St. Louis, C. V. Mosby Co., 1929. pp. 425.

Because there is so little literature available on the subject of the climacteric this book of Professor Maranon's cannot fail to be received with widespread interest. It is written, as the author states in his preface, from the standpoint of the general practitioner, and it embodies the observations of many years of active work, which are increased in value by the notes of the American editor, Carey Culbertson. The book is too extensive and too comprehensive to be reviewed in detail; it must be read carefully to be appreciated. The author emphasizes the difference between the menopause, which is merely a symptom of the climacteric, and the climacteric itself, which is an epoch caused by a complex endocrine crisis in which the ovarian, the thyroid and the suprarenal glands play the chief part. The relation of other diseases and other symptoms to this epoch are discussed in detail, and a novel feature is the introduction of references to extra-

medical literature to illustrate many of the points under discussion. The author is rather more enthusiastic than is the reviewer—or most other American gynecologists, for that matter—about the results of glandular therapy, and particularly ovarian therapy, but for the most part his therapeutic suggestions are rational and sound. At times Professor Maranon gives one the impression that the relation of certain diseases to the climacteric is a coincidence to be expected under the law of averages, rather than a true sequitur, and one wishes, also, for summaries for those chapters which are rather too full of material for easy mental digestion. On the whole, however, the book would seem to have a definite place in a little explored field of gynecologic literature.

It might be added in closing that the author, probably unconsciously for the most part, gives a very interesting picture of the mental and physical habits of Spanish women, which are apparently in sharp contrast to those of women of the Anglo-Saxon race.

C. JEFF MILLER, M. D.

PUBLICATIONS RECEIVED.

Williams and Wilkins, Baltimore: *Physiology and Biochemistry of Bacteria*, by R. E. Buchanan, Ph.D. and Ellis I. Fulmer, Ph.D.

D. Appleton and Company, New York and London: *Principles and Practice of Minor Surgery*, by Edward Milton Foote, A. M., M. D. and Edward Meakin Livingston, B.Sc., M. D. *Gonorrhea and Kindred Affections*, by George Robertson Livermore, M. D., F. A. C. S. and Edward Armin Schumann, A. B., M. D., F. A. C. S.

F. A. Davis Company, Philadelphia: *History of Blockley*, compiled by John Welsh Croskey, M. D.

The MacMillan Company, New York: *Chronic (Non-Tuberculous) Arthritis*, by A. G. Timbrell Fisher.

J. B. Lippincott Company, Philadelphia and London: *International Clinics, Volume II*, 39th Series, 1929.

W. B. Saunders Company, Philadelphia and London: *The Neuroses*, by Israel S. Wechsler, M. D. *The Nose-Throat and Ear and their Diseases*, edited by Chevalier Jackson, M. D., Sc. D., LL.D., F. A. C. S., and George Morrison Coates, A. B., M. D., F. A. C. S.

U. S. Government Printing Office, Washington, D. C.: *The Medical Department of the United States Army in the World War, Volume II, Finance and Supply*.

The Physiology of Love, by George M. Katsai-nos, M. D., Ph. D.

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and

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No. 2

OPEN OPERATION IN FRACTURES OF THE SHAFT OF THE FEMUR.*

J. H. RUSH, M. D.,
MERIDIAN, MISS.

A discussion of open operation is not free from contention. This contentious attitude, on the part of most physicians, is based upon two principle factors: (1) The danger of infection, and (2) the reciprocity of traumatism by the bony fragments from the methods of internal fixation. These points are well founded. Thoroughly appreciating these undesirable possibilities I do not attempt to justify open reduction as a routine procedure, but to say that open operation is never to be resorted to would be an injustice to many of our patients. In certain cases when firm union, proper approximation of fragments and correct alignment are at hazard because of the inadequacy of the more conservative procedures, our obligation to the patient leaves us but one choice. The success of this like that of the more conservative methods, depends upon the skill and good judgment of the individual surgeon.

Let us take thoroughly into account the condition with which we are confronted. We do not have here the likelihood of undisturbed healing as that of a clear-cut wound elsewhere because we are dealing not only with a fractured bone but with severely traumatized tissue, with hemato-

mata and wound pockets, a condition aggravated by the projecting spicules of the bones, which was torn at the injury. Discretion must be exercised in the selection of the time of operation so that we go in when the reparative process is active. Strict asepsis must be carried out in the most rigid manner. With the time of operation judiciously selected and with efficient asepsis infection is the rare exception rather than the rule. And should even a small portion of the infections so commonly mentioned really follow open reduction the beacon light of Lister has served us naught, and we stand groping in the darkness, hopelessly succumbed to the super-intelligence of bacteria, and leading our patients into the death trap of the hospital stinch of the pre-Listerian epoch.

ROLE OF THE PERIOSTEUM

The prime factor in the consideration of any operation for the fixation of bone fragments is its influence upon osteogenesis. The exact mechanism in the regeneration of bone is still largely a matter of speculation and controversy. From the recent work of Leriche and Policard of France it would appear that the periosteum has no true osteo-genetic action, but instead, under normal conditions prevents the formation of bone. Periosteum, their studies seem to show, together with all fasciculated structures as muscle fibers and connective tissue bundles, prevents the wide-spread osseous infiltration and tends to direct the osseous trabeculae in a parallel rather than a perpendicular direction. Similarly, the conclusion of McWilliams after a thorough study

*Read before the Mississippi State Medical Association, Meridian, Miss., May 8-10, 1928.

of the methods of bone grafting were that the presence of the periosteum upon a graft had but little influence upon its ultimate success.

AS TO THE BLOOD SUPPLY OF BONE

The work of R. W. Johnson, Jr., of John Hopkins, gives us a beautiful conception of the physiology of the blood supply of the shaft of long bones. I quote an abstract of his findings: "He finds that the nutrient vessels maintain viability throughout the medulla and supply the inner half of the cortex. Repair is active when the nutrient vessels alone are intact. The metaphyseal vessels maintain viability throughout the medulla and inner half of the cortex, but repair is not as active as in the controls except close to the metaphyseal ends, being notably delayed in the middle of the shaft. The periosteal system does not normally supply more than the outer half of the cortex and is unable to afford an effectual collateral supply to the medulla of the diaphysis under four weeks time. The periosteal repair is relatively poor in the healing of cortical defects. Regarding the shaft as a whole the nutrient vessels are the most important, metaphyseals next, and periosteal system least."

GENERAL CONSIDERATIONS

In our work we have employed most of the standard procedures in an effort to obtain the best possible fixation of fragments with a minimum of bone damage. And it appears to me that most procedures offer one advantage at the expense of the other. In determining a satisfactory procedure we must bear in mind that in bone we are dealing with a living tissue, and a tissue with a relatively scant blood supply. To assure a condition most favorable to osteogenesis that blood supply must be interfered with to a minimum degree and traumatism by drill holes, incision and by saw and chisel, and the introduction into the bone of foreign material, whether absorbable or non-absorbable should likewise be reduced to a minimum.

SOME METHODS COMMONLY EMPLOYED

In discussing briefly some of the commonly employed procedures I shall deal only with simple fractures in adult limbs.

Ivory pegs, beef bone pegs and other types of intramedullary grafts allow adequate fixation with a minimum of traumatism to the cortex of the bone. In many cases this procedure is difficult of application, and in addition I have always felt apprehensive as to its use because of the interference of the nutrient or diaphyseal systems of circulation, both of which traverse the medullary canal.

The autogenous bone graft naturally deserves the place of honor as the ideal material for the internal splints. However, with the small graft, as the inlay type, fixation is not absolute, the necessariness of incisions and drill holes introduces bone trauma to some degree, and in the post-operative application of the cast the graft might be broken. With the massive graft fixation becomes more secure, but with it traumatism becomes a more prominent factor, as the incision must be made deeper into the bone and there is greater sacrifice of its substance.

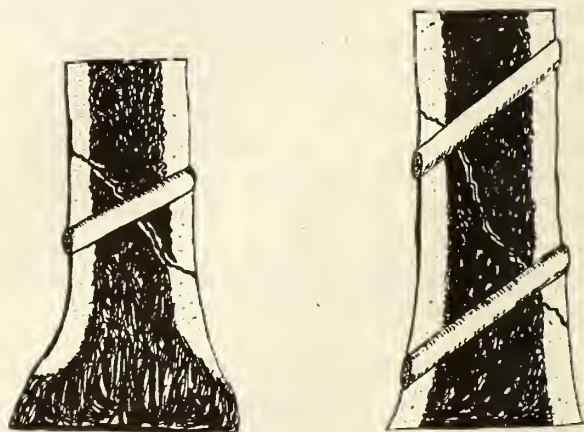


Fig. 1: Diagram showing manner of fixation of oblique bone peg in oblique fracture, illustrating the advantage of two pegs over one.

In oblique fractures the bone peg placed obliquely through the bone so that the extremities anchor the proximal and distal fragments respectively, meets our require-

ments satisfactorily. Unfortunately, however, it is applicable in but a limited number of cases. Since this graft accomplishes its fixation only by the contact of its extremities with the cortex of the bone fragments we have found it more satisfactory to use two pegs, one placed at either extremity of the fracture. A square peg in a round hole seems to hold more securely.

In our hands the Lane plate has provided the most secure fixation of transverse fractures. When a small drill is used so that the screws fit very tightly it is quite rare that the plate loosens and has to be removed. However, the introduction of foreign non-absorbable material into the bone substance is not a point to be desired as rarefying osteitis does at times occur with subsequent loosening. This is the one great defect of methods involving the use of screws or wires traversing the cancellous tissue.

To my way of thinking the use of circular wires and metal bands provides the procedure of choice. With them, unfortunately, we are dealing with non-absorbable material, but there is no drilling nor cutting into the bone, there is no interference with the circulation and no foreign material traverses the bony substance. Con-

sequently rarefying osteitis does not occur and traumatism is reduced to the minimum. But their application, too, is limited.

Realizing the advantage of double wires and double bands in these oblique and spiral fractures, I devised a metal internal splint to which were attached two bands for the fixation of transverse as well as oblique and spiral fractures.

This is a modification of the Collin's band and is made of German silver. The rectangular bar has been made longer with a cross piece in the middle to prevent bending. On one side extending from the rectangular bar are two bands instead of one, the bands being placed at each corner rather than the middle, as in the Collin's

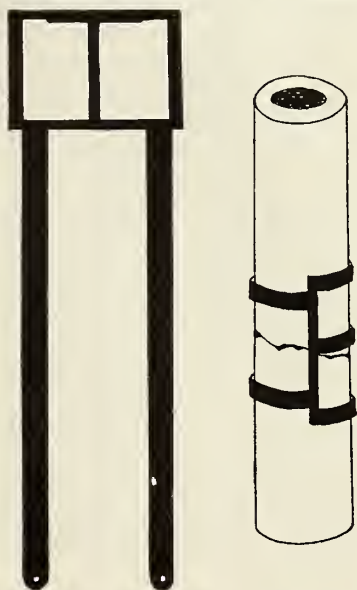


Fig. 2: The author's German silver band, and showing its applicability in transverse fractures of long bones.

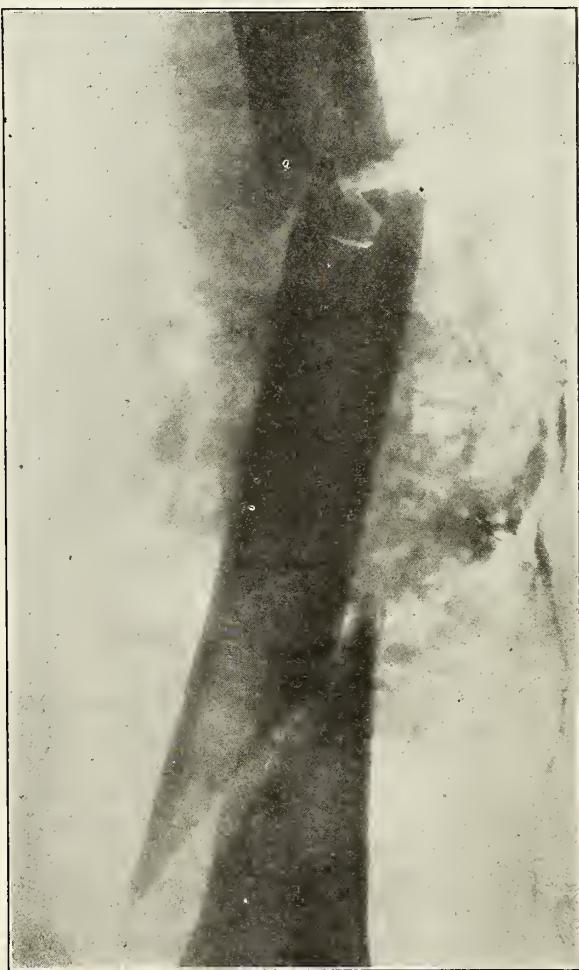


Fig. 3: Fracture of femur 8 weeks after injury showing malposition and delayed union.

band. This allows more stable fixation of spiral and oblique fractures than the Parham-Martin or Collin's band, and with it transverse fractures can be held with facility as it combines the advantages of the Lane plates and the circular band.

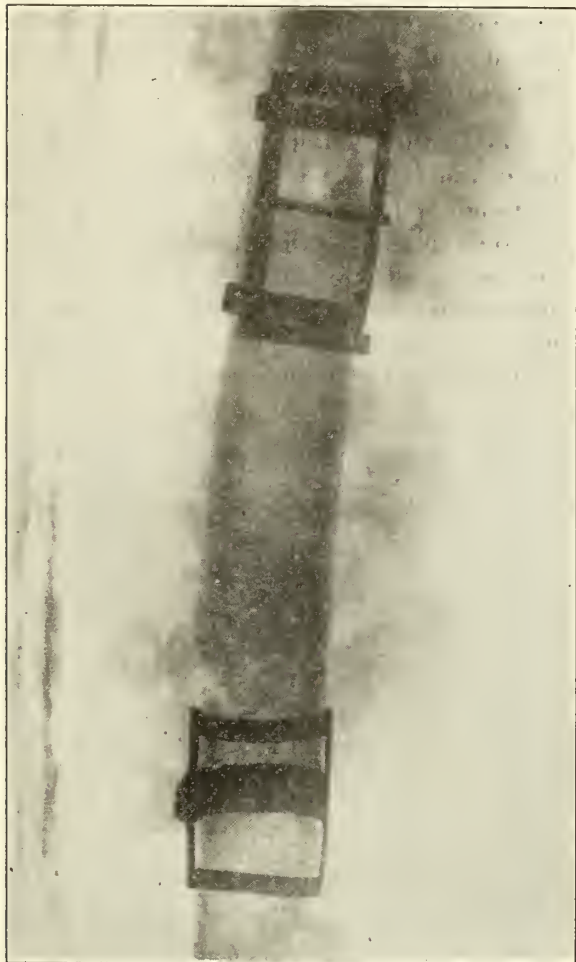


Fig. 4: Same case as Fig. 3 after open reduction. Collin's band has been applied to spiral fracture and the author's band to the transverse.

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DISCUSSION.

Dr. J. S. Ullman (Natchez): Gentlemen, this is not only an interesting paper, but a very admirable paper. Dr. Rush has brought out some very good points. It reminds us of a fact that so many of us are prone to overlook in doing bone work, and that is the mechanics involved in the individual case. Lane pointed out some years ago that most of the failures in the use of his plates were due first to careless technique or sepsis; in other words to infection, and secondly, to a failure to appreciate the mechanics involved. Where you have a fracture, he stated that many men were putting on a plate with one screw on either side, and instead of making a splint they were making a hinge. Naturally you have early pulling out, or loosening up of your screw.

I had the pleasure of hearing Dr. Johnson's paper at Memphis before the Southern Medical last fall. It was an admirable one as Dr. Rush has said, and I am sure all of us are convinced that we must respect the blood supply and there are cases in which arises the question of using mechanical means, non-absorbable splints internally—the question of conserving the blood supply. I had quite a little bit of experience over seas in bone work, and I found that if you give a completely detached fragment—that is a fragment that was completely separated from all other bone—if there was no blood supply, some fragments too that were separated from soft tissues, a great many of them would be viable. Dr. Rush did not tell us just how long his apparatus is. It is going to be necessary, if we are going to get good fixation, to have these bands to separate the rigid portion and the portion that is far enough back from the point of fracture to give an efficient mechanical support. There are times, of course, when we have to resort to some form of plate, or other means of fixation, but personally I am—of course there is a personal equation again—I am a little too timid about introducing foreign material and non-absorbable splints, and in my own work I have tried to get along without resorting to an open operation. As Dr. Rush says though there are times when you have to do it in order to maintain it. It is a question though whether it might not be wiser to resort first to the use of skeleton traction pins, or something of that sort with a properly fitting co-application splint and a good plaster afterwards.

Another thing about the use of pegs that occurs to me here. Of course good men are using the

square peg in the round hole. That has come about because it is hard to get a bone peg with a round cross section fit squarely in the round hole. You can drive a square peg in and get four good points of contact, but I think we could get another lesson from the machine shop, or from the automobile manufacturer, and remember that when he wants a tie back or pin to stay put, he puts a tapered pin in place. Any of you who have ever tinkered with your own automobile, and have tried to remove a tapered pin, know that it takes a great deal of effort, and all you need is a pin with a slender taper put in the hole. If we are going to devise such a thing, it will mean accurate apparatus, but I believe that will be the solution of the problem. I thank you.

Dr. Isidore Cohn (New Orleans): I think one thing, in expressing my words of appreciation of Dr. Rush's paper, is that he has failed to remember that it is the man behind the apparatus, and not the apparatus. Dr. Rush has shown us his own versatility by the various types of operative and conservative means which he has supplied, but he fails to tell us that it is Dr. Rush and not this particular band that he is using. A good many people in applying Dr. Rush's band would get it just a little bit too close to the ends, and it would not work.

In regard to the application of fixative apparatus—general fixation, etc., I want to say in the beginning that I believe that a great many more cases, if we would apply conservative anatomic principles from the beginning, that we would have to resort to operative procedure very much less than we do. More than that we would sustain a traction where our plastic fixation does not work so well, while if we will apply some of the mechanical principles externally that we apply internally, we will get good results. For instance, if there is a displacement—one fragment up above and one below—and we are worried about how we are going to get that back in place—whether we use the Collins band for traction, or whether we use adhesive makes little difference, and if this antero-posterior displacement is not restored, we can have a modified Pearson attachment applied above and one below, and gradual pressure with screws will make those fragments come into position very nicely. This can be applied to almost any strength we like. I believe in most instances the average one of us had better keep our hands off. In the hands of a man who is absolutely satisfied with his own skill, and who has a good working team as Dr. Rush must have, why he is going to get good results.

In regard to the inter-medullary peg Dr. Rush very properly paid his respects to it by saying

that whatever type you apply is going to interfere with your osteogenetic bone development, and the two basic sources of osteogenesis are the periosteum and the eposteum. I believe that the periosteum is a natural splint and source of bone supply and it prevents infection if not tampered with too much. It is not a source of bone regeneration we believe, but the eposteum is.

But your intramedullary splint if applied tight enough will interfere with circulation, and therefore interfere with your intra-osteal development of the bone. There are many cases where that fixation will stay there long enough to get good results, but in a majority of instances I believe intramedullary graft should not be used.

Dr. John C. Culley (Oxford): I feel a hesitancy in following such men as Dr. Ullman and Dr. Cohn, in discussing this paper, but I believe we have a very timely subject for discussion. The adoption of the hard surfaced roads, the enormous increase of automobile accidents with the lumber industry in Mississippi, as it is growing daily, we are continually seeing more and more fractures of the femur. There is quite a number of points which time will not permit, but Dr. Rush did not mention the type of anesthesia, and I want to leave this one word for the Association to study thoroughly. I am advocating something which has not been used very much in the past, and that is spinal anesthesia. Under ether anesthesia, without the use of the Hawley table, it is almost impossible to get anesthesia. I am going on record as making this statement, that all those cases in which you are going to have shortening unless you do operate, I believe in operating. Why can't we operate on the femur under the same conditions as we can go into the abdomen? As far as the splint to be used, as Dr. Cohn says, let that be left to the operator. I am going to use the Lane band whether it is a spiral or an oblique fracture. I see no reason for using a splint on a transverse fracture. If you get a transverse fracture you are not going to have any trouble with that fracture getting out of line, if you have the proper splint. The most important point is the after treatment. Ask yourself "is the patient a young man? Is he a syphilitic, or is he a diabetic? What about his nourishment afterwards? Is he young or old? If you will permit me, I want to give you just one illustration. A man 76 years old was brought to me with an upright fracture of the femur. That patient's financial condition must be considered. Has he the money to lay in the hospital from 4 to 5 or 6 weeks, with an extension? Is that man going to have shortening unless you do use traction, or unless you do an open operation? Under spinal anesthesia that old

gentleman lay up there and talked to me during the operation, said he didn't believe I was doing anything to his leg. The spinal anesthesia gives relaxation of all muscles. You are not going to need any traction; if you have a Hawley table, you are simply going to have to use just enough tension to close the break. In five days time, that old gentleman was taken to his home; he is now sitting up in a chair enjoying good food and was not put to the expense of a big hospital bill. The wound has healed perfectly, and he is feeling fine, and by carefully watching his diet, and watching his kidneys—do this with all patients, and you are going to get much better results. It is important to watch the kidneys because in this day and time we are finding more diabetics every day.

Dr. M. Ewing (Amory): Formerly I used a whole lot of fixation on fractured shafts of the femur. I used the Hawley table, when I put them up, roentgen-ray pictures afterwards showed every callous, and I got to considering how many times patients are debilitated for many years with an artificial leg before they got used to that leg, and I regard some of these internal fixations as harmful. Those who have fracture service and well equipped traction apparatus very seldom have to use open operation. I rarely use it. I have a single case that I know of, of non-union. I believe every man should use his own details, but I do think it bad advice to give a general body of surgeons or practitioners that you should use internal fixation. Dr. Rush did not say that—he said now and then you get a union where you have to use it. Dr. Culley is a little stronger than that—he is using open operation. If Dr. Culley, is adept at it, it is the proper thing for Dr. Culley but I don't believe that most of us are, and in the majority of cases, it is my opinion that if you use the Hodges splint and Lane band or whatever apparatus is known to have the proper anatomical adjustment, you will get results, and like Dr. Cohn said, if we use the same amount of intelligence and the same amount of care and anatomic knowledge with skeleton traction, we will get results.

Now just one more thing—I heard Dr. Campbell once say, “did you ever see a dog with a non-unioned leg from a fracture?” They all unite. Why? Because there is always use of it with a certain amount of motion. Absolute fixation without motion will result in very little callous and frequently in non-union. Skeleton traction does not completely mobilize, and I noticed in Dr. Rush's pictures here of these internal fixation points, how little callous was shown. The next thing is how long it takes that callous to form. Every now and then you take a young person, and they get a healing in almost two or three

weeks, but an older person does not, and frequently there are from six to eighteen weeks and longer before sufficient callous is there to absolutely hold it.

Dr. J. H. Rush (closing): I thank you gentlemen for discussing my paper. I enjoyed the discussion very much. The only thing I would like to mention is a point that Dr. Culley brought out, that there is many a time when your external splint is a bad choice but there is a financial consideration that has to be taken into account, as where you have charity hospitals, or where you have contract practice, and someone else pays the bill, you can afford to keep him in the hospital and apply these tractions as they ought to be, but there are very few people who can afford to lie in a hospital for six weeks with a traction. In a case of that kind we have to resort to internal fixation in order to get the patient out, when you would use external traction otherwise. I thank you very much.

BODY CHEMISTRY IN ITS RELATION TO SURGERY.*

T. P. SPARKS, M. D.,

JACKSON, MISS.

In the past decade rapid strides have been made in the perfection and simplification of technic in making blood chemical examinations so that even the smaller laboratories are now equipped to do the routine examinations considered necessary by the clinician.

The addition of this valuable adjunct to surgery has made it necessary for the surgeon to familiarize himself with the subject to the extent that he can properly evaluate the information which it affords, but with this information at hand he has a means of determining more accurately than ever before the true physical condition of his patient.

The brief time allotted here does not permit a general discussion of body chemistry and I shall confine my remarks to only a few of the more important phases of the subject which relate to conditions most frequently seen in daily practice; namely,

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renal conditions, acidosis, alkalosis and shock.

Renal impairment due to foci of infection, over-eating, alcoholism, and the like, is a frequent complication in patients seeking relief for some surgical ailment and the exact nature and extent of this impairment is tremendously important, and to a large extent influences our choice of operation, time of operation, anesthetic and prognosis. Careful physical examination and urinalysis do not always reveal the presence of renal impairment. Not infrequently a patient with negative urine and a negative physical examination is operated quite successfully from a technical standpoint, and yet the patient dies in a few days from an acute nephritis. These cases are sometimes regarded as accidents, but there is a rapidly accumulating mass of data that tends to prove that these cases had definite renal impairment before operation. A recent observer reports a case which well illustrates this point. The patient, a white male, aged 37 years, with a urine negative, both chemically and microscopically, showed a total non-protein nitrogen of 200 mg per 100 cc of blood, urea nitrogen 125 mg., and creatinin 6 mg. This represents a retention to the extent of nearly six times the normal amount of total non-protein nitrogen eight times the normal amount of urea nitrogen, and over three times the normal amount of creatinin. With this marked renal impairment it is doubtful whether the patient could have survived a severe surgical operation.

In addition to blood chemical examination for retention products, renal function tests offer a simpler and fairly accurate method of determining kidney function. A great number of these tests have been suggested, but the phenolsulphonphthalein test suggested by Rowntree and Geraghty is the one most often used since it requires very little equipment and is simple in its application. A good out-put from this test denotes good kidney function, but a poor out-put does not always denote extremely bad

function. One example of this type of case is exemplified in obstructions low down in the genito-urinary tract where there is a minimal output of dye and an almost normal blood urea. Usually in this type of case the dye output comes back to normal when the obstruction is relieved.

In spite of the remarks made elsewhere in this paper with reference to the inadequacy of urinalysis, there is one urinary test which I wish to mention. It is the concentration test, and because of its simplicity it can be easily carried out with very little inconvenience to the patient or physician. The patient is allowed to eat supper, containing not more than eight ounces of fluids. He neither eats nor drinks anything else until the test is completed. Before retiring he voids and the urine is discarded. On awakening he remains in bed and three specimens of urine are voided at hourly intervals. The specific gravity is taken on each specimen and the highest is taken as a maximum. If kidney function is normal, a concentration of from 1.025 to 1.032 will be attained. In severe renal impairment the specific gravity is under 1.020. This test is valuable in beginning nephritis as it sometimes shows an inability to concentrate at a time when the blood urea is normal because the kidney is compensating for its inability to concentrate by an increased output of water. Any deviation from the normal should be followed up with a study of the blood and functions tests with dye. The application of these tests routinely, each in its proper place, will result in the detection of many cases with renal impairment who would otherwise have gone on to operation without adequate preparation and with less than a normal chance at recovery.

Acidosis has been defined as a depletion of the fixed alkalies in the blood. The exact nature of the reaction is still not well understood, but two constant factors are noted in the blood regardless of the type of acidosis, and these are a lowering of the blood sugar and of the CO_2 combining

power. In upper abdominal surgery, particularly operations on the gall-bladder and ducts, acidosis is one of our most frequent and dreaded complications. Examination of the blood before operation will often reveal low blood sugar and CO_2 volume per cent, and in these instances proper administration of glucose will certainly lessen the amount of acidosis and may even prevent it altogether.

Alkalosis which is much rarer and more difficult to control is sometimes a complication in upper abdominal surgery. The symptoms of the condition are very similar to acidosis; namely, weakness, nausea, headache, muscle aches, drowsiness, and later protracted vomiting. Fortunately, the blood picture is very different. The CO_2 combining power is high and there is a decrease in the blood chlorides. Blood chemical analysis is the only way to differentiate these two conditions which differ so widely in the treatment and yet resemble each other so strikingly in their clinical manifestations.

In diabetics, regardless of the kind of surgery done, acidosis is to be feared, but here again blood sugar estimation with the proper administration of insulin gives these patients almost as good a chance as a normal person would have.

I wish to mention here in connection with diabetes another marked discrepancy in the urinary and blood chemical examinations in a case recently called to my attention. This patient came to the hospital for a minor surgical operation; the examination of the urine on several occasions showed only a trace of albumin, a blood sugar determination showed a concentration in the blood of 400 mg. per 100 cc. of blood. In view of the fact that 180 mg. per 100 cc. of blood is considered about the normal kidney threshold, it is almost unbelievable that a patient could carry nearly four times this amount in the blood without having some overflow into the urine.

I have mentioned shock not with the idea of discussing it fully, because that would

require volumes, but merely to suggest a measure in its treatment which has recently been recommended as being very beneficial in some cases. It has been known for a long time that the blood chlorides, and to a lesser extent blood sugar, are diminished in shock. This same state of affairs exists also in toxic states and cases of continued vomiting. Because of the diminution of the blood chlorides and blood sugar, intravenous administration of hyper-tonic salt solution has been recommended, 100 cc. of 20 per cent saline being suggested as the ideal amount. Dr. Julius Crisler in a paper read before the Central Mississippi Medical Society this year recommended the procedure very highly. Personally, I have had an opportunity to try it out in conjunction with small doses of insulin and glucose in only two cases—one of these was a patient in extreme shock who was seen hours after the injury, and in this case the patient died a few hours after admission to the hospital apparently not benefited even temporarily by anything that was done for him. In the other case, a man who had a badly comminuted fracture of the tibia, exhibiting typical signs of shock, but who was brought in immediately after injury, this method of treatment was employed in conjunction with the other measures recommended and he reacted well in about two hours. It is not possible to say until a large number of cases have been studied whether or not this measure is of benefit but it is certainly worth a trial.

In conclusion I wish to reemphasize the importance of a blood analysis in pre-operative cases since I believe no one means at our disposal so accurately guides us in our pre-operative treatment and prognosis.

DISCUSSION.

Dr. W. H. Parsons (Vicksburg): I enjoyed Dr. Sparks' paper very much. I think that he brought in in his paper the fundamental thing we desire in surgical and medical cases, and that is life, and the points that he has emphasized tend very much toward that preservation. I believe that a majority of us, in a majority of cases, have contented ourselves with simply a routine

examination, and a routine urinalysis, and from these have brought out the fact as to whether or not the patient is a fit subject for surgery. I think a certain percentage of our mortality has resulted from that superficial examination. I believe we have attached too much importance to urinalysis and without disparaging that examination, I think that it is a matter of minor importance.

Dr. Sparks cited a very interesting case in which a negative urine was disclosed, yet urea was high in the blood. I recall two cases of mortality that I myself had, both in surgery of the upper abdomen, and both these cases were examined according to the average fashion prior to surgery, and both accepted as fit subjects. One was referred to me as being acceptable for surgery by a very competent internist, but about the fourth day after surgery acute nephritis developed and death followed very promptly.

I think Dr. Sparks has brought to us a very interesting paper and while there is a great tendency to be careless because of the fact that the vast majority of all patients on whom we operate will survive, I think that they frequently survive not because of the care they have had, but because of the wonderful machine with which we deal. But the occasional mortalities we do have and which distress us so very much, I think in many cases could have been averted had more care been taken in preparing those cases for surgery. The majority die because of some breakdown in the machine to which possibly we gave scant attention prior to surgery.

Dr. G. S. Bryan (Amory): I think this is too valuable a paper to go undiscussed. I want to say I thoroughly enjoyed that paper. We are not in the infancy of blood chemistry. Blood chemistry has been done in relation to surgery and medicine enough to prove it to be a valuable procedure in all cases. I was particularly struck with the acidosis discussion in this paper. I believe that when a person is sick there is a dysfunction of different organs of the body, whether the kidney, or the pancreas, the liver or other internal secretory organ. So far we have developed simple technique by which we may be able to determine largely how much dysfunction of these different organs there is. The blood determines the case. Take for instance, what really happens in acidosis in the case of the diabetic, where we get an over production and severe acidosis. There is no organ exempt from the ravages of acidosis. We know that the body requires food. We know that each gram of protein is capable of producing 4 calories of heat; we know that

each gram of fat is capable of producing 10 calories of heat; we know that each gram of carbohydrates produced 4 calories. Now in any disturbance of the normal relation of this soil, if we take the proteins, the fat and the carbohydrates—if that soil is getting enough, the normal function will go along; if there is a disturbance of the carbohydrates, if they are drawing on the fats and the proteins to offset that disturbance—if this soil gets enough carbohydrates it will function more or less normally, but if it does not get enough in drawing on its proteins and its fats then there is ketone body formed. So it strikes me in the preparation of the patient for surgery, it will be necessary to determine what the percentage of increase or decrease in acidosis content of the blood is, whether you call it acidosis or alkalosis. We can do that, and I think in well regulated hospitals it is more necessary that we have it before doing surgery, to test whether the kidneys function, to make an exploratory test to determine the status of that patient before he goes on the table.

Dr. L. S. Lippincott (Vicksburg): This subject is particularly interesting to me. Just one point in regard to surgery on diabetics. It can be done with insulin without any trouble, but I want to emphasize that the patient have a good supply of vitamins in the liver at the time of the operation. To get that supply the patient should not be starved but receive plenty of carbohydrates; that can be done with the use of insulin prior to the operation. Following the operation the use of carbohydrates has to be continued because if you starve the patient, he will use his own body fat and that requires carbohydrates for dilution. If he hasn't got it, it will cause acidosis and a good supply of vitamin in the liver will help to overcome that, but you must keep on with the carbohydrates afterwards. The patient may die from acidosis because of lack of carbohydrates.

Dr. John C. Culley (Oxford): I do not want to rise to discuss this paper, but while I feel I am young, yet I believe I am old enough to appreciate the fact that young men are coming on in this association, and it is particularly gratifying to us of Ole Miss when we come down here and see fellows like Tommie Sparks get up and read such a paper as he did, and it refutes the idea prevalent among some, that Ole Miss hasn't a medical department. I am mighty glad to hear that paper.

Dr. T. J. Sparks (closing): I haven't anything to add except to thank the gentlemen, particularly Dr. Culley, for the discussion.

LOCAL ANESTHESIA OF THE PELVIC OUTLET.

CARROLL W. ALLEN, M. D.,

NEW ORLEANS.

The tremendous developments in general anesthesia in the last decade with the perfection of special apparatus and the introduction of new, safer and more agreeable general anesthetics administered by specialists in this branch has greatly lessened the need and use of local and regional methods of anesthesia as developed by the master surgeons in this field thirty or forty years ago. Notwithstanding the tremendous strides made by general anesthesia there must still remain selected cases either due to the physical state of the patient, the nature of the operation, or the convenience of the operator, when so located that a skilled anesthetist is not available, where local anesthesia is ideally suited to the case; and in the hands of those surgeons skilled and accomplished in this art may even be preferred under all conditions to general anesthesia.

The anal and vaginal canals form a particularly inviting field, due to the arrangement and accessibility of its nerve supply. This region with its rich pathology is a fertile field for the surgeon and many of the conditions encountered here can be better operated under local anesthesia than under general narcosis.

The entire problem is one of a study of nerve anatomy, and how best to reach these nerves with our anesthetic solution. Briefly anatomy plus anesthetic technic. We can best understand the various steps in the anesthesia by keeping in mind the nerve anatomy. The entire supply is from the pelvic nerves, the pudic, inferior pudendal and coccygeal.

The pudic is the motor and sensory nerve of the anal canal, the other two supply the skin and subcutaneous tissue of the peri-

anal region. The pudic nerve, derived from the sacral plexus, passes out of the pelvis, curves around the spine of the ischium, re-enters the pelvis and courses downward, forward and inward passing along the side of the rectum about three inches above the anal outlet. Giving off the branches to the sphincter muscles in this position, it continues forward supplying the cut off muscle of the bladder and terminates as the dorsal nerve of the penis.

The inferior pudendal nerves passes out of the great sacrosciatic notch behind, lying to the outer side of the sciatic nerve, and passes downward and forward running alongside of the anal canal to terminate on the posterior surface of the scrotum or lower part of the vulva supplying the skin and subcutaneous tissues of these parts. The coccygeal nerves, several in number, run forward from this process to the perianal tissues.

It is seen from a consideration of the above that two plans of anesthesia are available; one to reach the nerves at their origin in the sacrum or at the plexus; the other to anesthetize them as they reach the anal canal. Both plans have their advantages.

Spinal anesthesia is, of course, available here but is not included in the strict acceptation of the term "local anesthesia" and is too dangerous to use routinely.

There are several different methods of reaching the plexus as it lies in the hollow of the sacrum, or the individual nerves just as they leave the plexus, but an exhaustive study of the subject with a description of the various methods for anesthesia is not possible on this occasion and the two methods which I will describe are simple and meet all conditions.

Sacral or epidural anesthesia aims to reach the sacral nerves in the sacral canal after they have passed out of the dural sac.

The dural sac terminates opposite the second sacral segment and the nerves, after

passing through it, run for a short distance in the canal before passing out through the sacral foramina. The object is to reach them all at this central point. The sacral canal is small and its foramina large and numerous and any injection made here rapidly runs out in all directions as well as passing up the spinal canal outside the dura. It is for this reason that it is necessary to flood the canal quite liberally and in case the patient is to be operated in a lateral position, as I sometimes prefer, to allow him to turn on his back for a few minutes after the injection is made otherwise the solution will run to one side and produce a one-sided anesthesia.

The injection is made through the sacral canal which terminates at the lower end of the sacrum just above the coccyx. It is best to study this on the skeleton before attempting the injection. It will be seen that the canal opens at the base of the last sacral spine in an inverted V shaped opening, each leg of the V at its lower end terminates in a little nodular process or cornu, which can be readily felt.

In making the injection the patient can lie in any position preferred, the lithotomy position, Sims position, or he may sit across a table with his back slightly projecting across the edge.

The injection is made by anesthetizing the skin and passing a long needle into the sacral canal after having properly identified its opening. The needle is slowly advanced feeling its way into the canal to a depth of about two inches. It is not necessary or advisable to go too deep as it is possible if the needle is advanced too far to enter the dural sac, this however is very unlikely and can be guarded against by slightly aspirating with the syringe before making the injection.

Having advanced the needle to a satisfactory depth the injection is slowly made using about 20 to 25 c.c. of a 1 per cent solution of novocain containing three drops of adrenalin to the ounce.

Anesthesia usually results in about three to five minutes in all the pelvic nerves except the great sciatic, this being rather too large to be affected by this method but usually shows a slight numbness. The average duration of anesthesia is about forty-five minutes but may last longer.

This method of anesthesia is preferred in extensive operations or complicated conditions, particularly in old fistulae with multiple openings surrounded by callous tissue where infiltration is difficult, in hemorrhoids complicated with fistulae or in female patients where a perineorrhaphy or some vaginal work is to be done in addition to hemorrhoids or fistula.

It will be seen by a consideration of the nerve supply that this method has quite an extensive application, anesthetizing all of the pelvic nerves except the sciatic it produces an anesthesia of the perineum, anal canal, vaginal floor, uterine cervix and vault of vagina, base of bladder, prostate and distal half of penis, and consequently can be used in all operations on these parts. It has been used to much advantage in the second stage of labor but the difficulty here is to properly time the injection so that the anesthesia will be effective when the head reaches the perineum.

In using this injection for vaginal work it must be borne in mind that the anterior vaginal wall and anterior half of vaginal outlet are not anesthetized except the clitoris, which is the analogue of the penis and is anesthetized through the pudic nerve anesthesia. It should be mentioned here that while the cervix and neck of the uterus are anesthetized its fundus is ordinarily not affected but this part at most has little sensation. These parts just mentioned as escaping the anesthesia it will be remembered receive their nerve supply from the lumbar plexus.

Anesthesia of the anal canal by the direct method of anesthesia is accomplished as follows: a circle of anesthesia is first established around the anal canal at the mu-

co-cutaneous junction. This is best done by starting about one inch or more away from the anal margin where the skin is less sensitive, using a fine needle and working toward the anus and progressively passing it around its margin. With this anesthetic circle established a finger is then passed into the anal canal, a long needle attached to a 5 cc. syringe is then used and the needle passed up outside or through the external sphincter injecting as the needle is advanced to a depth of two or two and one-half inches. Four points are selected for this injection, one on each side and one in front and behind.

In cases of ulcer or fissure a small pledget of cotton wet with 1 per cent or 2 per cent solution of cocain can first be placed in the canal but this is not necessary if care is used and the deep injection first made just beneath the ulcer. Following these deep injections, anesthesia is almost immediate and the operation may begin at once, preceded by thorough dilatation of the canal. These injections are all of $\frac{1}{2}$ per cent novocain solution containing four drops of adrenalin to each ounce.

In uncomplicated cases of fistula the anal canal is first anesthetized as above and with the finger still in the canal the long needle is entered just outside the external fistulous opening on its distal side and passed upward toward the canal, injecting slowly until the canal is reached.

The above method of anesthetizing the anal canal is the simplest and quickest and gives immediate and complete anesthesia by establishing a zone of anesthesia just outside the canal by the diffusion of the solution which quickly surrounds the canal and through which all nerves must pass and are blocked before reaching the canal.

It will be found in cases of hemorrhoids operated by this method that they are found in their normal condition, they are not edematized by the injection as it is made well outside of them and the troublesome congestion usually seen under general

anesthesia is absent. The vascularity of the parts is also controlled by the adrenalin in the solution which produces an ischemia as the pudic arteries which supply these parts come down with the pudic nerve from the spine of the ischium and follows the nerves in its distribution. For this reason the operation is practically done in a bloodless area which adds greatly to its facility and simplicity.

Regarding the types of operations done on these parts it would seem unnecessary to enumerate them as all operations are possible in anesthetized tissues and each surgeon has his own favorite methods of dealing with the different pathological conditions.

THE ROLE OF BANANA IN THE DIET OF INFANTS.*

L. VON MEYSENBUG, M. D.,
NEW ORLEANS.

Two years ago I reported before the Orleans Parish Medical Society a series of 90 infants, ranging in ages from four months to two years, to whom banana had been fed as a fraction of the routine dietary. A subsequent communication a year later brought the series to 140 cases and the present report includes some 250 babies.

If, in retrospect, we recall our teaching of infant feeding in the medical schools a decade or more ago, we must be impressed by the extreme caution that was exercised when milk only was allowed during the first year of life. We now see how groundless such caution was and as our knowledge of the physiology and bacteriology of the infant gastro-intestinal tract broadens we become more rational in our feeding of babies. Chemical and biological analysis of our food stuffs, supplemented with animal feeding experiments, has placed scientific feeding on a plane never before achieved, albeit much remains in obscurity. Napoleon's dictum that an army advances on its

*Read before the Louisiana State Pediatric Society, New Orleans, April 8, 1929.

stomach might be generalized by saying that the health and vigor of a nation depend upon what goes into the stomach of its babies.

CHEMISTRY OF THE BANANA.

Allow me to detour a moment in order to refresh your memories as to the composition and biological characteristics of the banana.

In the green fruit the carbohydrate fraction is made up of 1.2 per cent glucose, 6.5 per cent sucrose and 14 per cent starch. As the fruit ripens the starch is split by enzymatic activity within the pulp so that in the fully matured golden-brown skin banana we find 11 per cent glucose, 8 per cent sucrose and 1 per cent starch.

Protein constitutes less than 1 per cent of the edible portion and the fat is entirely negligible. In the ash, Sherman reports these percentages—CaO 0.01; MgO 0.04; K₂O 0.50; Na₂O 0.02; P₂O₅ 0.055; Cl 0.20; S 0.013 and Fe 0.0006. In comparison with other fruits in common use, such as orange and lemon, it is low in calcium, high in phosphorus and magnesium and excels in iron all other fruits excepting strawberries. Cellulose makes up about 0.8 per cent of the edible portion.

As to vitamins. Several investigators report that Fat Soluble A is present in sufficient quantity such that 0.5 per cent of banana added on a dry basis to a vitamin A free basal ration will prevent xerophthalmia in rats.

Eddy and Kellogg have shown that while banana is not rich in vitamin B, it has at least the same B value as tomato juice.

As regards the antiscorbutic factor the banana is second only to orange juice. The evidence at hand indicates a deficiency in antirachitic factor D while Evans and Burr have shown the presence of E, though it is not rich in this factor.

The energy value of the banana is represented by one calorie per gram of ripe pulp or 447 calories per pound.

The inner portion of the pulp has been found sterile, the inner coat of the peel very sparsely inhabited by bacteria.

PREPARATION OF BANANA.

In selecting a banana to be fed to a baby, it is quite essential that a number of requirements be fulfilled. In the first place the banana must be thoroughly ripe and time must be taken to explain to the mother what is meant by this. There must be no green in the skin, it must be entirely yellow with black spots or the skin may be brown provided the pulp is not mushy or brown. Secondly the banana must be completely macerated, preferably through a fine wire mesh sieve. Lastly judgment must be exercised in not giving too much to the baby. They all love it and would eat any quantity.

In my records of banana fed babies, I find that of the total number of 258 there were 3 whose stools became quite soft with a tendency to diarrhea. In such instances it was discontinued. One baby vomited every time banana was given.

The constipated babies were greatly relieved, for the most part no other measures being directed against the constipation. The stools change in respect to color and consistency after banana feeding. They assume a grayish color, are soft and frequently show small black threads. In the absence of diarrhea there is no increase in the stool fat as shown by Soudan 3 staining.

When starting a four or five months old baby on banana feeding, 1 teaspoonful only of the mashed pulp is given for the first few days. If well tolerated it is increased cautiously up to 6 or 8 teaspoonfuls. If the baby refuses it the first time, it is offered again on subsequent days and the dislike invariably changes to a desire for more.

Of the diseases in which banana has a definite therapeutic indication, celiac disease and scurvy are representative. Numerous reports in recent years have clearly indicated that in celiac disease the banana carbohydrate is the only form of carbohy-

drate that is tolerated and it is thus a valuable addition to an otherwise monotonous protein diet.

In clinical and experimental scurvy, the banana is curative. Because of its low protein content banana is a valuable adjunct to the dietary treatment of nephritis.

SUMMARY.

Often called the "poor man's fruit," the banana is always plentiful and cheap; it is a nutritious, easily digested form of carbohydrate that nature puts up in a sterile container. Infants as young as four months tolerate ripe banana perfectly when given in moderation. All vitamins except antirachitic D are well represented.

HERMAPHRODITISM.

REPORT OF CASE OF PSEUDO-HERMAPHRODITISM.

HYDER F. BREWSTER, M. D., AND HERBERT E. CANNON, M. D.

NEW ORLEANS.

Among the earlier authors Ahlfeld¹ defined a true hermaphrodite as one who could fecundate another and also be impregnated by another individual, or, in fact, could impregnate oneself; and to carry it further, produce a progeny of its own. This definition is the purely theoretical and ideal conception of true hermaphroditism, for it would mean that both gametes proper must be present in the same individual in a mature state in order to function. Pick defined hermaphroditism as a mixture of opposite sexual characteristics in one individual.

Young² defined a true hermaphrodite as one in whom the gonadal elements of both sexes are present and classified them as follows:

(a) Bilateral, in which there is one testicle and one ovary on each side of the body, four gonads in all.

(b) Unilateral, in which there is a testicle and ovary on one side and a single gonad on the other side, three gonads in all.

(c) Lateral, in which there is a testicle on one side and an ovary on the other.

(d) A fourth type, in which there are only two gonads, but in which one or both of them is an ovotestis containing both ovarian and testicular elements.

In true hermaphroditism the external characteristics may be those of either sex; rarely have the characteristics of both sexes been present at the same time or at successive periods. The external and internal genitalia may show any of the anomalies of which these structures are capable. We were able to find only twelve acceptable cases of true hermaphroditism reported up to the present time.

Numerous theories as to the pathogenesis of true hermaphroditism have been developed. The following are the outstanding ideas:

(1) Sauerbeck maintains that hermaphroditism is the result of an atavistic developmental hindrance; the primary state of true hermaphroditism or bisexuality changes in normally developing embryos into monosexuality; pseudo-hermaphroditism is the incomplete disappearance of one sex.

(2) Tandler and Gross conceive true hermaphroditism and pseudo-hermaphroditism as a malformation *primae formationis* without any known developmental cause; they do not believe in the existence of true hermaphroditism as the primitive sexual form of the metazoa.

(3) Kermauner does not believe in the existence of true hermaphroditism. He considers it as a form of pseudo-hermaphroditism, which according to his conception is a local mechanical genital malformation. This leads to the rejection of the bisexual analage of the germinal epithelium.

Kwartin and Hyams³ enumerated the chief characteristics of true hermaphroditism as follows:

(1) In all cases of true hermaphroditism there is a mixture of external male and female sexual characteristics.

(2) Most undoubted cases of true hermaphroditism possess either unilateral or bilateral ovotestis.

(3) According to most observers the ovarian part of the ovotestis lies cephalad, the testicular dorso-caudad.

(4) In most cases the testicular part of the ovotestis is larger in size than the ovarian.

(5) In almost all cases of ovotestis the ovarian portion is highly differentiated; in the ovarian stroma primitive, primary or mature Graafian follicles with egg cells, corpora lutea and corpora fibrosa can be recognized.

(6) This indicates activity on the part of the ovarian stroma which may be manifest in spotting or regular menstrual bleeding.

(7) The testicular portion of the ovotestis or of the alternating gland proper shows the following characteristics:

(a) It is small, atrophic or rudimentary.

(b) Histologically it exhibits more or less completely the features of a cryptorchic testicle. There is an imperfect development of the cell elements in the seminiferous tubules. Although Sertoli cells can occasionally be recognized, these may be absent and the basal membrane lined by one or several layers of epithelial cells, interpreted by numerous authors as archispermatozoa or spermatagonia. The differentiation may go further and spermatocytes, spermatids and even spermatozooids are said to have been found. Mature spermatozoa have never been shown to be present in a case of true hermaphroditism. Burden and Masson's statement that spermatozoa were found should be weighed

carefully, the study of their photographs does not indicate a higher stage than that of spermatocyte. In many of these testicular portions, especially after puberty, there is a marked increase in the elements designated as Leydig's interstitial cells, which are claimed to be responsible for the development of the secondary sexual characteristic. Another feature in many cases is the progressive centripetal hyalinization of the basement membrane.

(8) These morphological features indicate absence of function or hypofunction on the part of the testicular portion; erections and even fluid ejaculations have been noted, yet never were spermatozoa found in this fluid.

Both glands are in a state of hypoplastic development, with dysfunction or complete lack of one or both constituents. Halban's reason for this hypoplastic developmental state is that the impulse for the development of the sexual system as a whole, which normally is concentrated upon one system (either male or female), in case of true hermaphroditism is called to act upon two system (male and female) with the disastrous result that it becomes insufficient to force either of them to the normal degree of development.

Pseudo-hermaphrodites may be divided into:

(1) The male type, in which the external characteristics of the male predominate, the person thus assuming the role of a male.

(2) The female type, in which the external characteristics of the female predominate, the person thus assuming the role of a female.

The majority of cases recorded are of a pseudo type in which the formation of the external genitalia is such as to give rise to the impression that both male and female organs are present but which on operation or necropsy are found to have simply the glands of one sex. The other

sexual parts are mixed or are intermediate and of various degrees of development. It is often found that only with the entrance of adolescence the real sex of the individual becomes manifest. Among pseudo-hermaphrodites the male type predominates.

The thought that hermaphroditism tends toward mental instability is apparently erroneous, for hermaphroditism of any type rarely occurs among mental patients. At the Danville State Hospital there has been only one case of hermaphroditism among 13,830 patients; that is, during the fifty-six years.

CASE REPORT

The patient, a colored male, single, twenty years of age, was admitted to Charity Hospital February 5, 1929, complaining of pains in the right side of the abdomen. Three days previous to admission, mild pains started in the region of the left sacroiliac synchondrosis but gradually moved across the upper sacral region posteriorly into the right iliac fossa, thence down the right inguinal region. Two days before admission, pain and swelling were noted in the right scrotal and testicular region. By the following day the swelling had progressed to the size of a baseball and the pain was severe. Considerable nausea and a little vomiting supervened but these soon disappeared. A sense of fever was noted but no chills occurred. All other complaints were denied; there being no urethral discharge and no discomfort on micturition or on defecation.

The patient stated that he was born with genital peculiarities but rarely had he been sick. In fact influenza eight years ago was the only illness admitted except for a mild attack of the present illness about one year ago. At that time the symptoms were all milder and lasted only four or five days even though no medical attention was sought. At that time no urethral discharge and discomfort on micturition were associated. No history of undue traumatism could be elicited to account for either attack.

By merely conversing generally with the patient one would not suspect any genital peculiarity. He has always stood erect to urinate. For three or four years sexual intercourse with the opposite sex has been indulged in, apparently in the proper manner and with great satisfaction. Seminal discharge occurs at the proper time. Attraction is always toward the female and never to the male. His selection of playmates and

all of his associations have been in accord with masculine tendencies.

Nothing could be detected to suggest periodic or cyclic changes in physical or psychic make-up which might be interpreted as synonymous with menstruation.

In the family history no similar or other congenital anomalies could be traced.

Physically the patient was generally well developed, five feet eight inches in height and weighing 140 pounds. The voice was masculine in quality and general conversation revealed a degree of intelligence slightly above the average for his race and age. The hair of the scalp resembled that of the African male. The face was free of all hair except that of a very small and

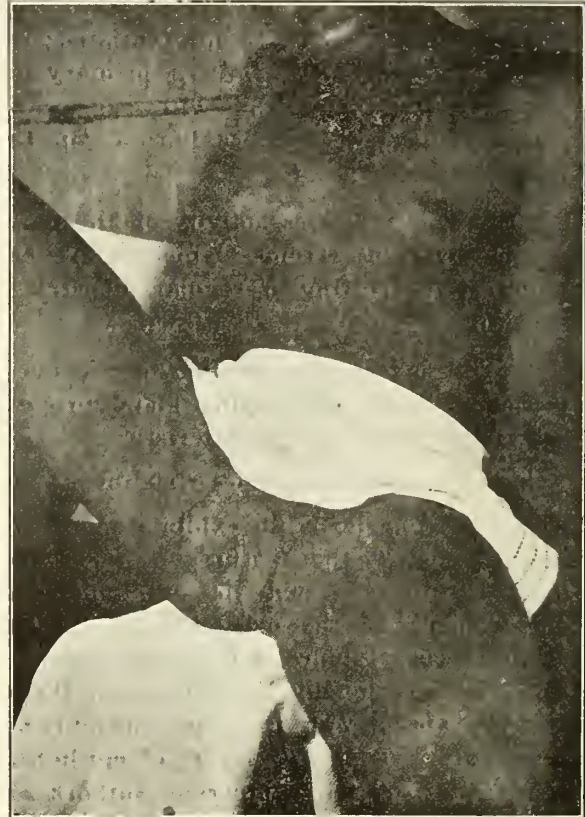


Plate 1: Rather well developed breasts are apparent; a small keloid is visible medial to the right nipple. The general appearance of the external genitalia is presented.

fine texture. The breasts were rather well developed, about two-thirds the size of an ordinary orange, and presented lobulations of tissue apparently true glandular in nature. Generally the body surface was free of hair of any notable size. Pubic hair conformed to the female pattern.

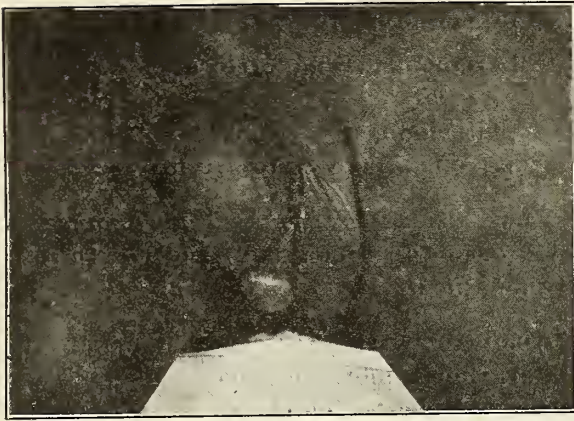


Plate 2: The separate scrotal masses are seen above and lateral as well as anterior to the small posteriorly displaced penis with well developed glans but no prepuce. The right hydrocele and swelling are apparent.



Plate 3: The penis is elevated by a strip of adhesive thus bringing into view the hypospadiac urethra. It will be noted that all scrotal tissue is above or to either side of the penis.

Genital examination revealed a scrotum divided into two separate and distinct compartments and masses corresponding in position to labia majora. The left testicle was about one-half the normal size and presented minor lobulations, and a massive division into a lower, medial, smoother and finer portion and a higher, lateral, more irregular and softer portion. Apparently a vas could be palpated leading from the latter portion. The right scrotal content did not lend itself to such complete examination. Swelling, heat, redness and tenderness were in evidence. The testicular mass proper was displaced posteriorly, while about most of its contour could be detected a tense, fluctuant mass about the size of a baseball and answering the description of an acute hydrocele secondary to acute epididymitis. Swelling and edema as well as tenderness followed the spermatic cord into the inguinal canal. Displaced posteriorly was a small penis about one inch in length

with fairly well developed glans but without prepuce of any description. The urethra presented hypospadias all the way back to the mid-perineum where its wall became complete and the lumen of normal size; there being no evidence of urethral discharge. Folds suggesting labia minora were in evidence but nothing corresponding to a vagina could be found. A small prostate was palpated by rectum but apparently the left vesicle was absent.

Roentgen ray examinations of the chest and pelvis as well as electrocardiograms, urinalysis, phthalein test, blood picture, blood pressure, blood chemistry and blood Wassermann showed nothing abnormal. Fluid aspirated from the right hydrocele was clear, light amber in color and presented a few endothelial cells, rare leukocytes and no organisms. A specimen of semen obtained from the patient, voluntarily collected by him as a dried spread on a glass slide, presented a sparsity of spermatozoa of normal morphology.

On the night of admission the patient was suffering considerable from pains previously mentioned. The temperature was 100°F. and general restlessness prevailed. Sedatives were given freely and ice bags applied to the right scrotal and inguinal regions. These same measures were continued on the sixth with only moderate relief to the patient. On the seventh, twenty cubic centimeters of a ten per cent solution of calcium chloride were given intravenously; in a few hours all pain disappeared. The same dose of calcium chloride was given on the eighth and again on the ninth. The pains never returned and the swelling and tenderness rapidly subsided. However, even on the sixteenth when the patient was discharged some right hydrocele was present. Operation was contemplated but the patient refused to submit, at least at the present time.

SUMMARY

(1) A variety of definitions, Young's classification of true hermaphroditism and theories of pathogenesis are discussed.

(2) The criteria of true hermaphroditism are enumerated.

(3) Twelve proven cases of true hermaphroditism are on record.

(4) Most cases recorded are pseudo-hermaphrodites.

(5) Pseudo-hermaphroditism may be of the male or female type, the male type predominating.

(6) A case of pseudo-hermaphroditism is reported.

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PROBABLE PRIMARY OVARIAN
SARCOMA WITH MULTIPLE
METASTASIS.*

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The greatest number of ovarian sarcoma in children occur between ten and fourteen years of age, corresponding to the transitional period. Of fifteen hundred and thirteen tumors of the ovary collected by Olshausen, sixty-one occurred in girls under ten years of age. Doran found a sarcoma of the ovary in a living seven-months premature baby. Jochmann in 1898 recorded twenty cases of solid tumors in children. Hubert in 1901 recorded one hundred and seventy-five cases of both solid and cystic tumors up to the age of seventeen years as follows:

Benign tumors:

Dermoids	39
Cystomata	19
Cysts	53
Haematomata	4

*Read before the Louisiana State Pediatric Society, New Orleans, April 8, 1929.

Malignant tumors:

Carcinomata and cystocarci-	
nomata	28
Epitheliamata	4
Sarcomata and cystosarcomata	28

Thus in this series we find approximately one-third malignant and two-thirds benign tumors.

Klauhammer in 1912 stated that half of all ovarian tumors in childhood are dermoids. Hubert found sixty malignant tumors in one hundred and seventy-five ovarian tumors in children, a proportion vastly greater than in adult life. Of the sixty malignant tumors thirty-two were sarcomas and twenty-eight were carcinomas. The sarcomas were largely of the round-cell variety.

Of the one thousand ovariectomies performed by Wells, only three were on children. In contrast we have the record of Olshausen who performed seventeen hundred and sixteen ovariectomies, sixty-one of which were on children.

It has been observed that cystomas increase in frequency as age advances.

According to Eisendrath, lymphosarcomas are rare in children.

Schiffey, in 1925, reviewed the literature on one hundred and eighteen cases of sarcoma of the ovary in children. He finds sarcoma of the ovary in general, a trifle less than 4 per cent, and that 18 to 25 per cent of all ovarian neoplasms in children are sarcomas. Fifty-nine per cent occur before the age of fourteen. Only one-fourth of the patients gave evidence of precocity.

Malignant growths of the ovary in children are rarely recognized early enough to operate successfully, and the prognosis is accordingly very grave. Sutton collected twenty-one cases of sarcoma of the ovary operated in childhood with a mortality of 52.4-10 per cent. Harris successfully removed a sarcoma of the ovary from an in-

fant of twenty-two months. Two fatal cases are recorded by Hoffman and Cameron at twenty-two and forty months. Byford has a successful case at four years and four months. Rhorig removed a round cell sarcoma of the ovary, the size of a man's head, from a thirteen-year-old girl, the tumor was of rapid growth and there were no metastases. A moderate amount of ascites co-existed. Guibal successfully removed an ovarian sarcoma from a child less than three years of age.

Carcinoma of the ovary has been observed less frequently than sarcoma. Hunt reported a carcinoma of the ovary weighing 1000 grams. Precocious development was marked corresponding to puberty.

CASE REPORT.

I was called to see the patient on February 17, 1927, and elicited the following: The family history was negative, the patient was an only child of four years. She was normal at birth and developed normally up to the summer of 1926. She had had none of the diseases of childhood, and only infrequent colds marred her otherwise perfect health record. During August, 1926, the mother noticed that she had passed some worms, from the description given they were probably *Ascaris lumbricoides*. The mother thought that the child was looking pale, had a large abdomen, and that she needed medical attention, so the family doctor was visited. Through personal communication he stated to me that, "The child had a pot-belly, was anemic and that through the mother the child complained that she had difficulty in breathing while trying to sleep." A prescription for worms were given without an examination. This was the only contact he had with the case. The mother said that the child improved some after this treatment; however, in December, 1926, a local surgeon was consulted. After an examination he deduced that the case was one of tubercular peritonitis and so informed the family. (This physician stated to me later that all the earmarks of the disease were present in this patient, *i. e.*, distended abdomen, ascites, pallor with marked emaciation, temperature of a low grade was present and many irregular masses could be palpated through the abdominal wall. No laboratory or tubercular skin test were made. Palliative treatment was prescribed as the case was to all appearances hopeless.)

The little patient was half reclining in a rocker, marked pallor was noted, the expression was anxious and pinched. The head and neck

were negative. The chest presented the asthmatic picture, many wheezes could be heard and the respirations were rapid and labored. The abdomen was greatly distended, symmetrically. The abdominal wall was thickened and rigid. Many irregular masses could be palpated in the abdomen but except for the liver and spleen (both of which could be felt 10 cm. below the costal margins) no distinct outline could be made of any mass. A great deal of free fluid was apparent in the abdomen. The extremities were negative except for extreme emaciation. No superficial lymph glands were palpable. There was no sexual precocity. There was no diarrhea nor vomiting. The patient was unable to walk, could only speak with difficulty, but insisted constantly to be taken for a car ride. There had been no night sweats.

An intra-cutaneous tubercular skin test was made (negative at the end of twenty-four and forty-eight hour period), also paracentesis abdominis, but only about 300 c.c. of fluid could be withdrawn.

Laboratory reports (Dr. L. A. Hebert): Ascitic fluid: Color, greenish straw; sg. 1013; albumen, 35 gm. per liter; leukocytes, 22,500; large lymph., 97 per cent; small lymph., 3 per cent; erythrocytes present in centrifuged sediment; no bacteria in gram or acid fast stain. Serum Wassermann negative. Blood picture: Haemoglobin, 58; color index, 66; erythrocytes, 4,420,000; leukocytes, 12,600; lymphocytes, 23 2/3 per cent; endothelial leukocytes, 12 2/3 per cent; neutrophils, 62 1/3 per cent; eosinophils, 2/3 per cent; basophils, 2/3 per cent; poikilocytosis, anisocytosis and polychromatophilia present. The urine showed intermittent hematuria, albumen was present and there was a mild polyuria. No specific sediment was noted.

The patient gradually became weaker, refusing all food. Two days before death a distinct clinical lobar pneumonia developed in the lower left lobe. On the clinical and laboratory evidence obtained, a diagnosis of "Malignant abdomen" was made and the patient was kept as comfortable as possible. Death occurred on February 28, 1927, eleven days after my first visit.

Autopsy: A-27-1. Date: 2/28/27. Hour: 4 P. M. Name: E. P. Sex: Female. Color: White. Age: 4 years. B. L.: 100 cm. Clinical diagnosis: Malignant abdomen.

The body is that of a fairly well developed but very poorly nourished and blanched female child. Rigor mortis is present in all extremities. Post mortem lividity is present but most marked in the dependent parts. The pupils are equal, symmetrical, and measure about 3 millimeters. No edema is present. No special marks of identifi-

cation are found. No abnormalities or deformities are noted about the extremities. The most striking appearance of the body is the drawn face, shrunken cheeks and prominent malar bones. The neck is slender and emaciated with no prominences or glandular enlargements. The mouth, ears and nares present nothing especially worthy of note. The ribs stand out prominently and the interspaces are depressed. The skin is rather pale and tense. The abdomen is enlarged out of all proportion to the other body lines. This is quite apparent from the lower costal margin anteriorly, and on downward toward the umbilicus. The crest of the bulging again ascends followed by a gradual decline toward the left pelvic region. Palpable irregular masses are felt through the abdominal wall. They are rounded firm and continuous one with the other, and do not change or shift position on moving the body.

Peritoneal cavity: On opening the peritoneal cavity the distended intestinal coils are forced through the incision. On inspection several large masses are found in the left inguinal region. The appendix is considerably enlarged, free from adhesions and intact as it lies retrocaecal. The dome of the diaphragm extends to the seventh rib on the left side, and to the sixth interspace on the right side. The coils of the intestine are free from adhesions and inflammatory exudates, except at a point on the median line on the under surface of the transverse colon.

All of the mesenteric and retro-peritoneal lymph glands are enlarged, the largest gland having attained the size of a hen's egg. The omentum is somewhat thickened, hemorrhagic in appearance, with definite but small nodular enlargements here and there. A firm adhesion is found beneath the inferior surface of the transverse colon in the median line to a mass found in this area. In attempting to break up the adhesion between the omentum the transverse colon and the tumor mass there is revealed a necrotic area involving all the coats of the gut. The lumen of the intestine is easily brought into view, for the intestine here is perforated by a necrobyotic process. This is the only evidence of necrosis found in the autopsy. The spleen is found in its normal position and is enlarged. The liver is enlarged and extends approximately 6 centimeters below the right midcostal border. The diaphragm in the region of the vertebral column and aortic opening is somewhat congested and thickened, and the peritoneal surface is uneven and nodular. These nodules are of small size.

Pelvic cavity: This cavity is well filled and prominent due to the enlarged mass found on the left side. An elevated tumor mass in size larger than a golf ball, but smooth, lies beneath the serous coat in the position of the ovary. The

tube is adherent and continuous with this mass. The tube is smooth and glistening and gradually tapers toward a small but well developed child-like uterus. At first it is rather difficult to definitely determine this tumorfaction as involving the ovary and tube. The ovary and tube on the right side are about the normal size and appearance. In contrast to the right tube is the enlarged non-inflamed appendix. A small amount of cloudy transudative fluid is found in the pelvic cavity and dependent parts of the abdomen. The urinary bladder and uterus present no enlargement. The enlarged mesenteric and retro-peritoneal lymph nodes of this region present no evidence of breaking down. The coils of the intestine are free and present no pathology.

Pleural cavity: Both cavities are smooth, moist and free except in the left side where tags of recent adhesions are found. A small amount of blood tinged fluid is found at the base and dependent portions of the left cavity. The right cavity presents nothing especially worthy of note. The pericardial sac in the mid line is much thickened, and several small nodular masses are found here and there in the loose, boggy oedematous fatty tissue. The blood vessels of the posterior sternal group are congested and a few small nodular masses are found along the posterior surface of the bone. The parietal pleura covering the diaphragm is involved in a progressive infiltrative process for a limited area in the region of the great vessels.

Pericardial cavity: On opening this cavity the usual clear amber colored fluid is found somewhat increased in amount. No other pathology is noted.

Heart: The heart is about the average size, is soft and flabby, and is a pale reddish brown color. The visceral, pericardium and coronary vessels present no special pathology. The pulmonary artery contains only fluid blood and post-mortem clots. The valves and endocardium present no vegetation or new growths. The rings of the tricuspid and mitral valves are loose and gaping. The myocardium offers very little resistance and is friable.

Lungs: Both lungs are voluminous and crepitant and float. The lobulations of the right lung are distinct, and the serous surface free from exudates and adhesions. A slight discoloration due to pigment deposits is noticed. The lower right lobe is somewhat more voluminous and tense in the dependent portion. On sectioning a sero sanguinous material free from pus exudes on pressure. The upper and middle lobes are relatively free from abnormalities. The lower left lobe stands out in distinct contrast to the upper of the same side. The upper left lobe is

somewhat discolored and hyperemic over the area in apposition to the corresponding lower lobe. Some frothy material is found in the lower and dependent portion. The lower left lobe is involved in an inflammatory process evidenced by the voluminous and reddish appearance. The visceral pleura is considerably thickened, roughened and congested, with comparatively recent adhesions to the parietal pleura. On sectioning the lower left lobe bright red blood and serum exudes, while here and there over the cut surface is found cream yellow exudative material about which firmer areas of lung tissue are apparent. The structure of the lung is more dense in these areas. No other pathology is noted in the lungs. They as a whole being free from visible evidence of metastasis. The peribronchial lymph nodes are enlarged as well as many of the mediastinal glands. These vary considerably in size from the average normal to that of small marbles. On sectioning some are found to contain pigment. The larger nodes show pigment and infiltrating masses with no evidence of necrosis or caseation. They are firm with a gelatinous pearly colored surface where sectioned, and seem to present no attempt to coalesce. The lymph glands about the trachea present the same general picture. The mucus membrane of the trachea and larger bronchial tubes bears evidence of congestion and is covered with a mucoidal exudate. No nodules are found therein.

Spleen: The spleen is large, well shaped and slate colored. The capsule is somewhat thickened. Here and there grayish white nodules appear over the cortical surface, which push the thickened capsule in its advancing growth. The cut surface is a dark brownish red color, the trabeculae are well marked. Here the same grayish white nodules of sizes varying from small specks to split peas are found. No evidence of necrosis is seen.

Gastro-intestinal tract: This tract presents no pathology of moment except the erosion and ulceration found on the inferior surface of the transverse colon in proximity to the broken down mesenteric node previously mentioned. This process involves all coats of the gut, and tears in the attempt to separate the contiguous surfaces. Drainage appears to have followed this course.

Appendix: The appendix is uniformly enlarged throughout. It is rather long, with congestion and thickening of the serosa. Though the anatomy of the organ is distorted and changed in the new growth process, the organ is free from pus. The lumen is free of exudate and feces. The increased size of the organ is due for the most part to thickening of the submucus layer, and to no apparent stromal tissue increase. The caecum at the appendiceal junction is uniformly thickened, particularly in the lymphoid coat. The extent of

this enlargement ends rather abruptly in the immediate area.

Pancreas: There is no apparent involvement of this organ.

Liver: The organ is enlarged, and presents a dark reddish brown color. The capsule and visceral surface present nothing especially worthy of note, except a discoloration in and about the gall-bladder region. The gall-bladder is filled, the ducts patent and empty. On sectioning the liver, the cut surface is reddish brown in color, and free blood pours forth. No metastasis is found.

Kidneys: Both kidneys present the same general appearance, being enlarged, dark reddish brown in color with several small nodules here and there beneath the capsule. The capsule strips readily, and is somewhat thickened. On sectioning the cortex the cut surface is congested, and swollen, and several infiltrating nodules are found in the medullary and cortical portions. These grayish white areas are rounded in outline, and some are very small, the largest being the size of a small marble. There is no necrosis, but rather an advancing infiltrative process with displacement of kidney substance.

Adrenals: The adrenals present no special pathology.

Urinary bladder: The urinary bladder presents nothing worthy of note.

Genital organs: The left tube and ovary are involved in one large tumor mass formation, irregular in outline, and about the size of a large Irish potato. The mass recognized as, and occupying the position of the ovary, is round, smooth and regular attaining a size somewhat larger than that of a golf ball. On sectioning, this growth presents a grayish white gelatinous appearance. It is uniform in color, soft, but firm in consistency with no evidence of necrosis. Intimately attached to this mass, after a gradually declining depression, and in continuity with the growth is the enlarged sausage like tube. Its contour is not maintained but gradually tapers as it joins the fundus of the uterus where it is only slightly increased in diameter. Sectioning the tube along its course the lumen is found full, and the infiltrating growth seems to involve the coats as well as the mucosa. Along its entire course the tube is continuously covered with a smooth, shining, serous peritoneum, tense in appearance. No fluid or necrotic material is found in this involved mass. The right tube and ovary are apparently normal in size and appearance and do not seem in any way involved in either an inflammatory or neoplastic process. The remaining genitalia are apparently normal in size and development.

Aorta: The aorta and blood vascular tree present no special pathology.

Brain: Not removed.

Spinal cord: Not removed.

Middle ear and sinuses: Not explored.

Anatomical diagnosis:

Lobular pneumonia—left lower lobe.

Pleuritic effusion—left side.

Chronic myocarditis.

Neoplastic infiltration of lymph glands with necrosis of one in the mesenteric group.

Ulceration and perforation of transverse colon.

Neoplastic infiltration of spleen, appendix, kidneys, left ovary and tube, and diaphragm.

Transudative peritonitis.

Microscopic diagnosis:

Lymphosarcomatous infiltration of left tube and ovary, mesenteric retro peritoneal and thoracic glands, kidneys, spleen, diaphragm and appendix.

Lobular pneumonia.

Acute toxic myocarditis.

Acute parenchymatous nephritis.

The value of the intra-cutaneous test for active tuberculosis is clearly demonstrated in this case.

The extreme and widespread metastasis plus the advanced degree of pathology, involving practically all of the abdominal viscera and thoracic glands, plus some retro-peritoneal organs, make this case one of unusual interest to any practitioner of medicine or laboratory expert. It is almost inconceivable that one could live so long harboring such advanced changes in practically all the vital organs of the entire body.

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A COMPARISON OF RESULTS BY THE WASSERMANN AND THE BUTLER TESTS.

JACK LAZARUS, M. D.,

Stephenson, Miss.

The following series comprises a study of the results obtained in testing 766 specimens of blood serum for syphilis by the Kolmer modification of the Wassermann and the Butler tests.

The Wassermann tests were performed by the technicians of the white and colored units of Grady Hospital, Atlanta, Ga. The same specimens were then tested by the writer, according to the tube test recently devised by Dr. H. W. Butler, formerly associated with the Clinical Laboratory of Tulane University School of Medicine. A comparison of the results was tabulated, and clinical findings recorded in those cases in which the two tests differed. The study was undertaken, not with the purpose of showing the superiority of one test over the other, but rather to find out to what extent the results of the new test coincided with those of the method more universally used at present.

The technic of the Butler test consists in measuring one cubic centimeter of the Butler antigen into a 20 c.c. test tube and 10 c.c. of a 3 per cent saline into a second 20 c.c. test tube. Both tubes are then heated in a water bath at 56° C. for two to five minutes. The contents of the tubes are poured together and back and forth several times. One cubic centimeter of the mixture, while still warm, is then added to a test tube containing 0.2 c.c. of the non-inactivated blood serum. The tube is shaken well and the reading is made after the tube has stood over night at room temperature. Negative sera remain opalescent, while positive sera produce a precipitate which settles to the bottom of the tube. Little difficulty was experienced in making the readings, the precipitate in the positive cases being readily seen.

Of the 766 bloods tested, the Wassermann results were negative in 640 instances and positive in 126, as compared with 616 negative and 150 positive obtained by the Butler test. Similar results were obtained in 732 or 95.6 per cent of the 766 cases. The Wassermann gave positive results in five cases in which negative results were obtained by the Butler method, whereas 29 cases were precipitated by the Butler test, which gave a negative reaction according to the Wassermann.

No positive history of syphilis could be obtained in any of the five cases which were positive according to the Wassermann reaction but negative by the Butler. Of the 29 cases whose sera were precipitated by the Butler test, six gave histories pointing to syphilis, 20 denied syphilitic infection, and three gave histories of having had positive Wassermann's which became negative following treatment.

The positive factors in the six cases mentioned above are:

Case No. 1. Child is brought in for blood test; mother, with strongly positive Wassermann, taking antiluetic treatment: Butler positive, Wassermann negative.

Case No. 2. No luetic history; spinal fluid Wassermann strongly positive; blood Wassermann negative; Butler blood test positive.

Case No. 3. History of sore on penis; wife sterile: Butler positive, Wassermann negative.

Case No. 4. Denies venereal history; three successive miscarriages: Butler positive, Wassermann negative.

Case No. 5. Ulcer on genitals of five months' duration: Butler positive, Wassermann negative.

Case No. 6. Husband taking injections; one miscarriage: Butler positive, Wassermann negative.

Twelve of the twenty cases which gave positive Butler reactions and negative

Wassermann with no syphilitic history were obstetrical cases. Although the number of cases is too small to form any definite opinion, the possibility must be borne in mind that the test may be oversensitive to some component of the pregnant patient's serum which provokes the precipitation reaction.

SUMMARY AND CONCLUSIONS.

1. The Wassermann and the Butler tests showed similar results in 95.6 per cent of the 766 blood run.

2. Five patients gave positive Wassermann findings and negative Butler, with negative syphilitic histories.

3. Twenty-nine patients, six of whom gave histories pointing to syphilis, had positive Butler findings and negative Wassermann reactions. Three of the remaining twenty-three had had positive Wassermann's prior to receiving some antiluetic treatment.

BIOLOGICAL THERAPY*

OSCAR W. BETHEA, M. D.,

NEW ORLEANS

Many of the drugs that we use today were employed in a very similar manner hundreds or even thousands of years ago. The development of this part of our *Materia Medica* has been gradual through the centuries, and while we have the handicap of many traditional errors we also have the benefit of the accumulated experience of scores of generations of medical men.

On the other hand biological therapy is practically new, most of it having been developed within the professional experience of even the youngest of those present and our reactions to it divide us largely into three groups:

1. Those who, unduly fascinated by the novelty, uncertainty and element of mystery which characterize this new addition

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to our armamentarium, are often led into therapeutic extravagance.

2. Those who, skeptical of anything and everything new or unproven, tend to regard this development as but another fad that "Lighting a little hour or two—is gone."

3. Those who, with minds open to conviction, are conservatively but patiently and persistently availing themselves of every advance and lending their efforts toward the further development of this new field of science.

A large part of the credit for the progress that has been made in biological therapy is due the manufacturers whose untiring efforts backed by almost limitless capital, equipment and man-power have made rapid advancement possible. This very feature, however, has provided the stumbling block for many of the profession. Some of the manufacturers through over-enthusiasm or commercial promptings, have deluged us with extravagant claims and unproven theories presented as facts, till many medical men are discouraged in trying to separate truth from error and envision the whole field as tainted with the shadow of commercialism.

A primary source of trouble here, as elsewhere in the practice of medicine, is the very limited equipment in materia medica and therapeutics that is given their students by most of the medical colleges.

Conservatism seems to have marked the work of the revision committee of the last Pharmacopoeia, for out of over six hundred drugs included only about ten come under the usual classification of "Biologicals."

It may be worth our while to use the limited time available in an evaluation of the present status of this department of therapy, as I understand it.

Biological preparations include sera and preparations from them, vaccines and other bacterial products and glandular preparations.

In prophylaxis these reign supreme. Except for the element of human perverseness, they had conquered smallpox which at one time destroyed or disfigured a fourth of the human race. They have proven almost specific against typhoid, saving annually thousands of lives, and would stamp out this disease if universally applied. When one dies of tetanus or rabies it is, with rare exceptions, practically suicide or manslaughter. The recent work in diphtheria, scarlatina and some other diseases has passed the experimental stage and gives promise that these scourges will survive only in medical history.

In specific therapy biologicals already contend for first place. Our old drugs furnish approximate specifics for malaria, syphilis, amebic dysentery and rheumatic fever. Against these biologicals offer the remedies either for curing or for indefinitely prolonging life in diphtheria, epidemic meningitis, sprue, hypothyroidism, pernicious anemia, and diabetes mellitus; probably doing the same for scarlatina, erysipelas and plague; and they offer much help in pneumonia. The last is based not only on the accomplishment of Cole and his co-workers, but also on the recent report of Lambert.

It is only as therapeutic aids and not as specifics that most remedial agents are employed, and here the estimate as to value must be based on that indefinite element known as clinical evidence, and here we naturally find the widest divergence of opinion. In conjunction with the medication there is also brought to bear all the other measures for relief such as rest, diet, elimination, hydrotherapy and physiotherapy. The curative processes of nature and the self-limited character of most diseases must also be taken into account, so it is difficult to state just how much effect any one or even all of the medicinal agents have had—in fact, it is often a question whether we cured the patient or whether he simply got well. This uncertainty obtains particularly in the case of most vaccines and of

many of the glandular products, especially the polyglandular formulae.

There are some beneficial results, however, that seem almost certain: for example,

That the ovarian products lessen the discomforts of the menopause.

That pertussis vaccine lessens the frequency and violence of the paroxysms of whooping-cough.

That preparations of the hypophysis hasten the processes of labor, aid in the removal of intestinal gas, and are of benefit in enuresis.

That preparations of the suprarenals relieve the paroxysms of asthma and are of benefit in many other conditions.

We must also recognize the vast importance of the diagnostic value of some of the preparations under discussion: such as, epinephrine in the diagnosis of diabetes mellitus and thyroid disease; the Widal reaction for typhoid; the Dick test for scarlatina; the Schick test for diphtheria; and preparations of the bacilli in diagnosing tuberculosis.

Many questions yet remain to be answered:

Do the mixed vaccines from the flora of the respiratory tract aid in the treatment of diseases such as coryza, bronchitis, epidemic influenza and pneumonia? Hundreds of thousands have been given the various preparations in a wide range of dosage—and yet we don't know. Personally I believe that they have a field of usefulness.

Do stock or autogenous vaccines have a remedial effect in asthma and hyperesthetic rhinitis? They are used by thousands of clinicians today and rejected by other thousands. Personally I believe that in certain types of these diseases they are of value.

Are preparations of the bacilli of tuberculosis of therapeutic value? I believe that

in certain stages of some types of the infection they are.

Is antitetanic serum of value in treating tetanus once the disease has developed? The extensive statistics of the Charity Hospital of Louisiana and much other evidence is against it—yet most of us use the serum in treatment.

Is horse serum as a hemostatic a safe or reliable agent? Many have discarded it. Many rely on it as the mainstay of treatment of hemorrhage.

The skeptics should not be too prone to discouragement on account of some uncertainties, failures and errors in biotherapy. Just think of the status today of much of our old *Materia Medica*. Remember the millions of camphor injections that have been used as cardiac stimulants, the tons of sarsaparilla given for syphilis, the quinine wasted on pneumonia, and the dozens of alleged specifics for typhoid. Only a few generations ago antimony was the most largely used drug in the world.

Much of the difficulty today, as always in medicine, is to be found in erroneous or imperfect diagnoses and in a lack of intelligent discrimination in selecting remedies. This particularly applies in the new field of endocrine dyscrasias. Aside from a few proven facts, we are still groping in darkness with the full light of perfect knowledge yet far in the distance, but I believe that the light is there. We individually need to devote more time to an intensive study of this subject that we do not miss the opportunity to better serve humanity.

CONCLUSIONS

That biological preparations include many specific remedies, many agents for prolonging life, many therapeutic aids of proven value and many valuable diagnostic agents.

That this branch of medical science while yet in its infancy has accomplished much and gives brilliant promise for the future.

That neither over-enthusiasm nor obstructive skepticism constitute the proper attitude toward these preparations but rather that an open mind is necessary to render available the accomplishments of the present or to evaluate the possibilities of the future.

DISCUSSION.

Dr. Darrington (Yazoo City): I am sure we have all greatly enjoyed and profited by this paper from our visitor from New Orleans, and it is our great pleasure to have here this afternoon another very distinguished man from the city of New Orleans, a man who is professor of medicine in the greatest university that there is in the United States, and you all know, of course, that I refer to Tulane University. He is not only professor of medicine, but editor of the New Orleans Medical Journal, in which we are all particularly interested, and we would be delighted to hear him enter into a discussion of this paper—Dr. J. H. Musser of New Orleans.

Dr. J. H. Musser (New Orleans): I appreciate very much indeed the very complimentary words you said about me, particularly the most complimentary words about Tulane. The paper of Dr. Bethea is very interesting and filled with some very important consideration, indeed. I was particularly glad to hear Dr. Bethea call attention to the fact that most of the so-called biological products are comparatively of little value. He enumerated those which are of value. When you think of the claims made by manufacturers you can appreciate indeed that their use is far from important. I met with an opportunity of using biological products rather extensively the last few years. It happens that I have charge of the contagious disease ward in the Charity Hospital, and practically all of our cases are cases of disease which can be treated by biological products. The use of the diphtheria anti-toxin needs no reiteration. The results we get are magnificent, but the last three years I have charge of that particular ward, we have had but one death from diphtheria, which was not of the laryngeal type. That patient came in with far-advanced diphtheria and it was a horrible picture—she was practically moribund when she came in.

We have had excellent results with our scarlet fever anti-toxin. After the third day we have practically no results at all, but when the children get in early, I can assure you the result is almost miraculous. In a comparatively few hours the urine will start to clear up, fever will go down fast and the patient is to all intents and purposes well. Now that may be because scarlet fever the last few years has been very mild. We have had

a few severe cases that have come along, and we have had the same results.

We have also been using persistently anti-toxin against erysipelas and here again it has very excellent results, indeed. We have given this intra-muscularly and we also give it intracutaneously along the margin of the spreading rash. By doing this we put a block as it were up because the lesions of erysipelas are confined entirely to the skin, which stops the advancing rash, and we have worked with it extensively and in cases in which the rash is not affected by the serum—the anti-toxin—we have been able to stop it with this so-called blocking.

Dr. Bethea covered practically all of the types of biological products. Incidentally in the discussion of tuberculosis just a few minutes ago the thought came to me that it might be of some interest to tell a word or too about the so-called BCG vaccine which Dr. Calmette is using as a prophylaxis against tuberculosis. As you know, possibly, Dr. Calmette, after working a great many years has been able to attenuate tubercular bacilli, which were previously innocuous and which can be given to children by the mouth without any ill results whatsoever. I think it is eleven years he has spent in attenuating this particular organism. And now the question has come up, as a result of these statistics in New Orleans where there are a great many doctors of French extraction, who are naturally very much interested, as to the particular value of this product and whether it will be worth while trying out on the community. Dr. Calmette's figures are astounding and the figures which have come from other countries are also very remarkable, indeed. This vaccine is given wholly to new-born children of tubercular mothers a day or two after birth to prevent it appearing. I had the opportunity last week of talking with three or four men in this country who are primarily interested in tuberculosis—Dr. Krause, Dr. Duvall Smith and one or two others, and got their opinions about this practice. In our discussions at the New Orleans parish meeting we discussed the use of this particular vaccine. We were more or less enthusiastic about it, some of us, while others of us were rather opposed to it because after all you are feeding living tubercular bacilli to your children. I asked these particular gentlemen of their conception of it, and they felt that they were really unfavorable to it. As Dr. Paul Lewis, who is at Princeton in the Rockefeller Foundation there, says, "You can give it to your children if you want to." That is a stock answer to any question, and he further said, "Certainly I would not give it to mine."

Furthermore, the figures of Dr. Calmette could not be counted on because they were ostensibly

given in a group of patients who were not under special form of observation; nevertheless, those patients were sufficiently under observation to go to the clinics and to bring their children so that they were so considered cases, and that was the opinion of Dr. Kraus, who was at Saranac, and Dr. Duvall Smith. I want to thank you very much, gentlemen, for asking me to speak.

Dr. Seale Harris (Birmingham): I was particularly glad to note the conservative discussion of Dr. Bethea regarding biological products, because I know of nothing in medicine about which there is more poetry and less truth than the data which is given to the profession by some biological manufacturers. I think we ought to go very slowly in using any biological product without knowing that the product we are using is from a reliable house, and that it can be depended upon to do what is claimed for it.

I have been much interested, and rather depressed in a way, to see the number of products that have been put on the market by grasping pharmaceutical manufacturers to take the place of insulin in the treatment of diabetis. The claims of most of them are without any foundation in fact, and yet they are being used by gullible physicians. These same pharmaceutical houses are spreading propaganda against the use of insulin. There is no more danger in using insulin than there is in using quinin. There is not a case on record that I know of with fatal effects from using insulin. The propaganda that once you use insulin you have to use it always keeps many diabetics away from reputable doctors; I would say that, in a majority of cases in which insulin is used, after it has rested the pancreas and the function of the islet cells are restored, the insulin may be discontinued. One of these very much advertised pancreatic extracts was investigated by Banting, who took a handful of the tablets and made it into an emulsion and injected it into the veins of a dog and it has absolutely no effect on the blood sugar of the dog. Of course, it is some trouble to use insulin. Diabetics are hopeful that something to take the place of insulin can be found which can be taken by mouth instead of being given hypodermically. There is a new preparation, synthelin, that has been given internally, and in old chronic cases it does have some effect in holding down the sugar, but it causes gastro-intestinal disturbances and it is thought that it produces deleterious changes in the liver. We have used it but found that in some cases it produces nausea and diarrhea. Synthelin, however, is still in the experimental stage and is not on the market at this time. We are also using myrtilip in selected cases with better results than from synthelin. The diabetic must learn, however, that whatever he uses his diet must be regulated, and

that up to this time the use of insulin offers the only hope of health and life to the severe case of diabetes.

Dr. O. W. Bethea (closing): I would just like to express again my appreciation of the privilege of being with you and thank Dr. Musser and Dr. Harris for their kindly discussion.

ECTOPIC PREGNANCY.*

E. C. PARKER, M. D.,

GULFPORT, MISS.

Until 1883, ectopic pregnancy was of interest chiefly from a pathological standpoint, few if any cases were recognized clinically, but in 1883 Sir Lawson Tait did his first operation on ruptured tubal pregnancy. In 1876, Hennig said that the disease was so rare that directors of large obstetrical clinics might never see a case. In 1876, Parry was only able to collect 500 cases that had been reported. But in 1892,, Schienk collected 610 cases which had been reported in the five years previous.

Ectopic gestation may develop in the ovary or any portion of the Fallopian tube, and is then referred to as ovarian or tubal pregnancy, respectively; again, the condition may occur in the rudimentary horn of a malformed uterus, hence the term "extra-uterine pregnancy," so frequently employed, does not cover all cases. Primary abdominal pregnancy is also included in the definition, but it is extremely doubtful whether this ever occurs, although alleged authentic cases have been reported; despite trustworthy reports it is still open to doubt if we ever have development of a primary gestation in the abdominal cavity.

Ectopic pregnancy is not a rare condition and is frequently overlooked. Werth in 3600 cases (gynecological) reports 120 or 3.3 per cent; G. F. Blackmar in 3458 cases admitted to University College Hospital, London, states there were 95 cases of tubal pregnancy, or 2.7 per cent; Schumann in studying births reported to the

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Bureau of Vital Statistics of Philadelphia found in one year 56441 intra-uterine pregnancies, and for the same period he found reported in the hospitals of Philadelphia 186 ectopics, making a ratio of one ectopic to every 304 intra-uterine pregnancies.

Extra-uterine pregnancy was first mentioned by Abbicasis in the tenth century. In 1626 Riolan refers to several cases. De Lee says that the actual causes are unknown, but suggests the plausibility of (1) salpingitis, (2) pelvic adhesions, (3) infantile tubes with lack of cilia, (4) external wandering of the ovum, (5) diverticula and accessory tubes, (6) decidual reaction of the tubes, (7) disease of the corpus luteum.

Bland says that anything that would impede the descent of the ovum down through the tubes might cause an ectopic pregnancy.

It is exceptional for ectopic pregnancy to occur with the first conception, it is infinitely more frequent in women who have borne one or more children and who subsequently present a history of sterility extending over a period of some years. Just what relations sterility bears is unknown, it may represent an old inflammatory lesion. A small proportion of ectopics may follow immediately or shortly after an abortion or normal labor.

Ectopic occurs in about equal number in each tube. In 742 cases reported by various authors, 373 were in the left tube and 365 in the right, and in four cases it was found to have occurred in both tubes.

PATHOLOGY.

Pathology overshadows physiology and the tendency is not to progress and live, but to destroy not only the gestation itself but also its host. Werth says "the ovum which makes its bed in the tube digs its grave as well." The mortality of untreated cases of ectopic is high, 75 to 80 per cent; but for those who receive modern surgical treatment it is only from 2 to 5

per cent. About 95 per cent of ectopics are one-sided, but occasionally both tubes may conceive concurrently or independently of each other; sometimes a tubal gestation complicates pregnancy within the other, sometimes a tubal gestation complicates pregnancy within the uterine cavity. Neugebauer has reported 171 cases of this character. Repeated ectopics occasionally occur: Blackmar states that in 1179 patients operated on for tubal pregnancy, 44 to 2.2 per cent developed a subsequent tubal gestation. Schumann stated that 280 patients operated on for ectopic pregnancy, 134, or 47.8 per cent, subsequently developed a repeated ectopic gestation, a ratio of one ectopic to four normal pregnancies.

DIAGNOSIS.

A diagnosis of unruptured ectopic pregnancy is made largely from clinical history alone. The patient will go a few days over her time bordering on normal menstruation but with enough difference that she will notice it; she will have pains in the pelvic region, on the side of ectopic, not severe until rupture; the unnatural menstruation may last for days or even weeks. This is one condition that the physician is justified in making a tentative diagnosis from the subjective symptoms alone, but the diagnosis should be confirmed by physical examination. On inspection you will find the early signs of pregnancy locally; the vaginal mucous membrane is more or less discolored, the cervix is soft and the uterus will be slightly enlarged. Laterally to the uterus you will find a mass which is globular in shape and does not have a cystic feeling, but is tender, pushing up on the cervix gives severe pain; this has been positive in 37 out of 39 cases I have had.

When the tube ruptures the patient feels a severe pain and faintness, generally having repeated attacks of faintness and sometimes goes into temporary syncope. The temperature is subnormal, the pulse gets more rapid and weak, compressible and thready. Sometimes you see marked

air hunger and the respirations are increased. The hemoglobin and red cells will be found reduced and the leukocytes are always increased. Blood pressure is reduced and if hemorrhage is severe there is persistent pallor and the skin becomes cold and clammy. From this state of shock, fortunately the majority react. We sometimes have a rupture without severe hemorrhage which the patient thinks is abortion and is treated for it; this may go on for days or weeks, causing the formation of a hematocele. Symptoms during this period are atypical of a low grade pelvic inflammation.

I wish to report two cases that are rather unusual:

(1) Mrs. C., aged 29 years, was married at the age of 18 years. She had one child ten years ago and no other pregnancies. The family and past personal history were negative, except at the birth of child, when she had fever for about one week following. The patient was strong and well nourished. She had passed her menstrual period about ten days and then began to have pains in the pelvic region on each side and at same time to have a small amount of abnormal flow (thought she had caught cold). Two weeks later she was taken with a sudden severe pain in the lower right pelvis about the region of the right tube. A physician was called who immediately brought her to the hospital and called me stating he had a case of ruptured right tubal pregnancy. I confirmed his diagnosis and could also feel a tumor in the left tube resembling a tubal pregnancy and made a diagnosis of a possible double tubal pregnancy. On opening the peritoneum, free blood (about one pint) was found. The ruptured right tube was clamped and removed; it contained a fetus about half way out. Then we picked up the left tube and found an unruptured tubal pregnancy there; that tube was also removed. We noticed that the uterus looked like a beginning pregnancy, but thought that probably this was due to the bilateral tubal pregnancy. On the fifth day after operation, the patient aborted a six weeks pregnancy. This is the only case that I know of a triple pregnancy, one in each tube and the uterus at the same time. The patient made a normal recovery in about two weeks.

(2) Mrs. H., aged 27 years, white, had been married for five years, with no pregnancies. She had the usual amenorrhea, disturbed menstruation, and had some pain in the lower right pelvic

region, but did not consult a physician. She was at the table eating her noonday meal when the pain struck her so severely that she screamed with pain and could not get up out of her chair. A physician was called who administered morphin, gr. $\frac{1}{4}$, hypodermatically, and in 20 minutes repeated the hypodermic. The patient was in shock. The ambulance was called and the patient taken to the hospital. A physician phoned me to meet them at the hospital. Upon arriving the patient was pale and almost waxen in color, the skin was cold and clammy, radial pulse imperceptible. The patient was carried to the operating room immediately and prepared as rapidly as possible for operation. Atropin sulph. gr. $\frac{1}{100}$ was given hypodermatically and a hypodermoclysis of normal saline started. With novocaine locally and a very few drops of ether, the abdomen was opened and a bleeding tube clamped. An enormous quantity of free blood was found in the peritoneal cavity. The abdomen was cleared of blood, and the right tube with a fetus half way out was removed. The abdomen was then closed in the usual manner. The patient had a rather stormy recovery for four days, stayed in the hospital for 16 days and was discharged cured. Two years and eleven months after this the patient began with the same symptoms as at first. I was called as soon as she and her husband recognized the symptoms, and from the history and close examination made a diagnosis of an ectopic in the left tube. The tube with its contents were removed and the patient was able to return to her home ten miles distant on the eighth day. This is one of the unusual cases, as the patient was a primipara and there were no intervening pregnancies between the ectopics.

DISCUSSION.

Dr. R. H. Foster (Laurel): I enjoyed this paper very much. There is hardly anything to add, except one or two points, and one is to give pituitrin before you operate. I have tried it out and I find it works nicely. It will prevent a great loss of blood if you have active bleeding. I know some of you disagree with me, but if you have active bleeding it seems to have a good effect on the bleeding from the tubes as well as the uterus. My attention was called to this by a professor of obstetrics of Cincinnati, and since then I have been using pituitrin and we do not have much trouble with the bleeding.

Dr. V. B. Philpot (Houston): A few years ago I reported a series of 15 cases of tubular pregnancy that I operated on over a period of several years, and the striking feature of nearly all of these cases or at least three-fourths of them was that they had ruptured quite a good while before the operation. I do not think there were over three or four that we had that were

operated before rupture. I notice the authorities all state that it is very essential to operate immediately after rupture, otherwise you are pretty sure to have a death. Well, that hasn't been my experience. I think I lost in this series only two, and as I say most of them were old ruptures, and it causes me to believe that probably it is better to treat these patients conservatively,

especially if you do not have them accessible to the hospital. Treat them as you are treating other cases of shock. Keep them absolutely quiet and give them morphin. Practically all of them will overcome, I believe, the immediate danger of a rupture if they are let alone at the time. Of course, I do not mean if they are in the hospital or very close to one, but the majority of them are not. I just wanted to bring out that point.

REVIEWS

SUPERFICIAL INFECTIONS*

ALTON OCHSNER, M. D.,†

NEW ORLEANS.

(PART II)

In addition to the previously described local infections, it is essential to consider an infection of the face as a separate entity. As emphasized recently by Martin⁽⁵²⁾, Hinton⁽⁵³⁾, Wheeler⁽⁵⁴⁾, and Price,⁽⁵⁵⁾ infections of the face, especially those in the so-called "critical area" are especially dangerous because of the peculiar anatomy of the part. These peculiarities are: (1), the skin of the lip is very adherent to the underlying muscle; (2), in the lip there is no connective tissue; (3), there are rich venous plexuses, both superficial and deep, in close contact with the lip; (4) the facial vein which drains this area is flaccid, does not collapse easily, and has no valves (5) the facial vein communicates with the cavernous sinus by superficial anastomoses, i.e., the angular, supra-orbital, and ophthalmic veins, and by deep tributaries, the pterygoid plexus which passes through the foramen lacerum and foramen ovale.

The critical area of the face, as described by Hinton⁽⁵³⁾, extends "between the hair-line of the forehead above and the chin below with two parallel lines connecting this area at the outer border of the orbit on each side." According to Dixon⁽⁵⁶⁾, there are four factors responsible for the

serious complications resulting from infections in this area: (1) The frequent and early trauma. Individuals with a furuncle or pimple on the lip are very prone to traumatize it by squeezing it; (2), the absence of subcutaneous fat of the lip; (3), the active muscular supply of the lip. Physiological rest in infections of the lip means avoidance of all talking, as well as chewing. The muscles of the lip exert a pumping action on the venous radicles of the labial plexus, aiding in the forcing of the infected thrombi into the facial vein; (4), the inability of the veins which drain this region to collapse. Because of the possibility of extension of the process into the cavernous sinus, with a resulting sinus thrombosis, the prognosis is especially bad. Hofman,⁽⁵⁷⁾ in 102 cases of furuncles of the face treated in Bier's clinic, reported a mortality of 8.2 per cent. In one-third of the fatal cases the process was located on the upper lip. Dittrich⁽⁵⁸⁾ reported 88 cases of furuncles of the face, of which nearly 50 per cent were of the upper lip with a mortality of 10 per cent. Morian⁽⁵⁹⁾ reported 103 cases of infections of the face treated in Payr's clinic, 10.7 per cent of the cases ending fatally.

Ultra conservative treatment is indicated in all infections of the face, especially those of the upper lip. In contrast to the treatment of infections elsewhere in the body, early incisions, as well as any manipulative procedures, are strictly contra-indicated. Absolute rest of the part is indicated, prohibiting the patient to talk or chew food. The application of hot moist dressings favors localization. If liquifac-

* Presented before the Surgical Faculty, Tulane University, April 24, 1929.

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tion occurs, a small incision may be made. Of Dittrich's⁽⁵⁸⁾ cases, 40 cases of carbuncle of the upper lip were treated by incision, with a mortality of 13.6 per cent, whereas in 18 treated conservatively there was a mortality of 5.5 per cent. Friedmann⁽⁶⁰⁾ advises the use of Bier's hyperemia in cases of malignant furuncles of the face. An elastic band is applied the neck, producing slight pressure over the jugular veins for a period of 22 hours daily. In 24 cases in which this therapy was employed there were 18 in which there was no sepsis, all patients recovered. Of 6 cases in which there was an associated septicemia, three recovered. Because of the danger of the infection from a carbuncle of the lip extending up into the cavernous sinus through the angular vein, Bailey⁽⁶¹⁾ advocates ligation of the angular vein as a preventative measure.

LYMPHANGITIS.

Lymphangitis is a streptococcic infection of the cutaneous lymph channels. Lymphangitis usually follows some cutaneous wound. The original wound is often insignificant, and may not be noticed. Injuries such as an abrasion, pin prick, or blister are frequently forerunners of lymphangitis. The condition is characterized clinically by the presence of small red lines extending from the original wound to the regional lymph nodes. Pathologically⁽¹¹⁾ the process is not limited to the lymph channel alone, but there is always an associated perilymphangitis which produces the characteristic red lines. The reaction in the majority of instances is caused by bacterial toxins and not by the organisms themselves. This condition is often termed tubular lymphangitis in contradistinction to the capillary lymphangitis of erysipelas. Kanavel⁽⁶²⁾ divides acute tubular lymphangitis into four types: Type I is that in which all objective evidences and systemic reaction disappear in from 24 to 48 hours. Type II—Lymphangitis with minor local complications. The symptoms subside more slowly, resulting in an abscess at the site of the

original wound or in the regional gland. The systemic symptoms are mild. Type III—Acute lymphangitis with serious local complications. The patient is very ill, has severe pain locally, and develops local complications, such as tendon sheath infections and deep abscesses. Type IV—Acute lymphangitis with systemic involvement. There is little evidence of local reaction, an overwhelming toxemia is present, and the patient succumbs.

From this classification it can be seen that the clinical picture in lymphangitis may vary considerably. Characteristically, however, the condition is usually associated with more or less toxemia.

The treatment of acute lymphangitis is, first, prophylactic. All apparently insignificant and trivial wounds should be considered as potential causes of lymphangitis. Sterile dressings should be applied. The active treatment of lymphangitis is ultra conservative. The patient should be in bed. The affected member should be immobilized, as movement favors lymphatic circulation. The extremity should be covered with a large moist hot dressing, extending proximally as far as possible. The solution employed is immaterial; preferably it should be hypertonic to prevent maceration of the skin. Those most frequently employed are solutions of boric acid, magnesium sulphate (10-20 per cent),⁽⁶³⁾ and sodium chloride. As the patient is suffering from a toxemia, in addition to this local process, large amounts of fluid should be administered. Incision is seldom indicated and only when pus is present.

ERYSIPELAS.

Erysipelas is an inflammation of the cutaneous capillary lymphatics, together with the other cutaneous structures, produced by a specific micro-organism. Fehleisen,⁽³⁾ in 1883, isolated a streptococcus from a patient with erysipelas. With this organism he inoculated his own skin and produced typical erysipelas. Birkhaug⁽⁴⁾ has demonstrated that 91.2 per cent of the

strains of streptococci found in erysipelas belong in one group. Erysipelas occurs infrequently on the extremities, but usually on the face. The condition is characterized by a local inflammatory cutaneous lesion associated with definite systemic reaction. The degree of systemic reaction varies with the condition and the age of the patient. The more debilitated and the weaker the patient the more severe the systemic reaction will be. Locally erysipelas is characterized by an intense progressive reaction. The involved area is of a bright red color, the edge of which is slightly raised. The lesion is progressive and fades in the center as it extends peripherally. Milian⁽⁶⁴⁾ emphasized that the maximum pain, tenderness, redness, and swelling was found at the periphery of the lesion instead of at the origin. This he termed "the law of centrifugal maximum." Because the infection is limited to the skin, it may involve certain areas not involved by subcutaneous infections, such as the ear, which contains no subcutaneous tissue.⁽⁶⁴⁾ Bleb formation frequently occurs.

Erysipelas is a self-limited disease; all individuals recover provided they do not succumb to the toxemia. The condition is especially prone to recur. Numerous types of therapy have been advocated, yielding indifferent results. It is apparently immaterial what substances are employed locally. Because of the intense pain, wet dressings with hypertonic magnesium sulphate solution are of benefit. The toxemia should be treated by the administration of fluids.

Birkhaug,⁽⁴⁾ in 1926, reported the results obtained by treating 60 erysipelas patients with a specific serum. The serum was prepared according to the technic of Doulez.⁽⁶⁵⁾ In all cases there was a rapid improvement, as evidenced by decrease in the "toxic depression, critical drop in temperature and pulse rate, prompt fading of the erysipelatous lesions, and rapid absorption of the blebs and edema within the affected areas." Similar results are reported by Singer and Kaplan,⁽⁶⁶⁾ Symmers

and Lewis,⁽⁶⁷⁾ Allan and Wilder,⁽⁶⁸⁾ and Musser.⁽⁶⁹⁾ In contrast to these favorable reports McCann⁽⁷⁰⁾ found that the experience with the antitoxin at the University of Rochester was not favorable. He criticises the previous reporters for not controlling their series of cases sufficiently. If the antitoxin is to be of any value, it must be administered early.

ERYSIPELOID.

As the name implies, erysipeloid is an erysipelas-like condition affecting principally the extremities. The condition is, in all probability, due to a specific micro-organisms. In 1873 Baker⁽⁷¹⁾ described what is probably now known as erysipeloid under the name of erythema serpens. To Rosenbach⁽⁷²⁾ belongs the credit, however, for first isolating the specific organism from the lesions and for giving the name erysipeloid to the condition. The specific organism was found to be the same as that found in swine erysipelas, which Rosenbach⁽⁷³⁾ isolated and reported in 1909. This organism he termed Erysipeloid-porci-Rosenbach. In 1904 Gilchrist⁽⁷⁴⁾ reported 329 cases of erysipeloid, of which 323 were caused by crab bites or lesions produced by crabs. The disease is characterized by "slowly progressing, sharply defined, slightly elevated, dark, violaceous, almost livid red zones which developed around the site of inoculation."⁽⁷⁵⁾

Etiology: The organism is the same as that responsible for swine erysipelas. It is pleomorphic, and may appear as coccoid bodies or a straight or slightly curved rod. It is gram positive. Erysipeloid is the human type of swine erysipelas, although Klauder, and his co-workers, attempt to differentiate between the so-called erysipeloid and the human type of swine erysipelas. The condition is found practically only on the hand; a few instances of the condition occurring on the feet have been reported. It is found on the hands of cooks, butchers, and of those who handle meats, fish, and hogs. The incubation period varies from one to five days. The eruption which be-

gins usually at the site of inoculation is accompanied by a sensation of burning, pricking, or itching, without any constitutional symptoms and, characteristically, without the involvement of the lymphatics or lymph glands. It is most frequently encountered during the months from May to September. The erythema is of a purplish red color in contrast to the bright red color of erysipelas. Klauder⁽⁷⁶⁾ differentiates between the clinical condition, swine erysipelas in man, and erysipeloid. The symptoms are similar, except that in the former the symptoms are much more severe. The swelling is greater. The itching, burning, and pain are more severe, and lymphangitis, as well as glandular enlargement, are usually present. In cases of swine erysipelas there is usually a history of contact with hogs. Klauder, Righter, and Harkins report 1000 cases of erysipeloid among commercial fishermen. "At the site of inoculation swelling and a characteristic purplish red erythema appears, which progresses, involving one or more fingers, the palm, or the dorsum of the hand. Pain is a conspicuous symptom. It appears early. It is severe, deepseated, and accompanied by constant throbbing, incapacitating and sleep preventing. Lymphangitis, enlargement and tenderness of the regional lymph nodes are common, and appear early. The lymph nodes, however, do not suppurate. On deep incision at the site of inoculation a drop of pus may exude. The constitutional symptoms, fever, headaches, and malaise are invariably present during the first twenty-four hours. Some of these symptoms persist for a few days or longer, at times becoming so marked as to incapacitate the patient."

The prognosis in all types of erysipeloid, even the severe, as that described by Klauder and his co-workers, and in the swine erysipelas in man, is good as far as life is concerned. The disease is usually self-limited after two to four weeks.

The treatment of erysipeloid is very unsatisfactory, as far as local treatment is

concerned. Very few results have been obtained by treating the local lesion. Fatal cases of acute septicemic form have been reported occurring in veterinarians.^{(77) (78)} The importance of the condition is well understood when one considers that Klauder and his co-workers state that it is the chief cause of disability among fishermen who work in fish towns and who handle live, salt water fish. The specific treatment of this condition is very satisfactory. In the European clinics a specific serum has been prepared, and the results obtained from its use are very gratifying. A similar serum is obtainable in the United States.⁽⁷⁵⁾ According to Klauder and his co-workers⁽⁷⁶⁾ an injection of 25 c.c. of the serum causes a prompt disappearance of all symptoms.

TULAREMIA.

Tularemia is a specific septicemia with certain cutaneous manifestations. Because of these cutaneous manifestations this condition will be considered briefly at this point. Tularemia is especially interesting to Americans, because it is the only disease which was first described, its causative agent isolated, and its mode of transmission determined in America. Those interested in the history of tularemia are referred to a summary by Francis.⁽⁷⁹⁾ The specific organism is *Bacterium Tularense*. There are a number of carriers of this organism among the lower animals, the most important of which is the rabbit. This is by far the greatest reservoir as a source of human infections. Others are ticks, squirrels, deer flies, and birds.⁽⁸⁰⁾ The condition occurs primarily in animals as a bacteremia and secondarily in man as a result of bites of infected flies or ticks, or as a contamination of the hands with body fluids or internal organs of animals which are infected. One case in which the organism was transmitted from man to man was reported by Harris.⁽⁸¹⁾ From an analysis of 407 cases of tularemia Francis divides the condition into four clinical types:

1. Ulcero-glandular, the primary lesion being a papule, later an ulcer, which is accompanied by an enlargement of the regional lymph nodes; there are 272 cases in this group.
2. Occulo-glandular, the primary lesion being a conjunctivitis and accompanied by an enlargement of the regional lymph nodes; 25 cases.
3. Glandular. The primary lesion is relatively insignificant, the enlargement of regional lymph nodes being most important; 16 cases.
4. Typhoid, without primary lesion and without glandular enlargement; 24 cases.

Of surgical interest are the cutaneous manifestations, especially the ulcer which develops at the site of inoculation. Here a small papule forms which later becomes ulcerated. There is early an associated enlargement of the regional lymph nodes. According to Netherton,⁽⁸²⁾ characteristically there are subcutaneous nodules along the course of the lymphatics extending from the initial ulcer up to the regional gland. The condition is very apt to be confused with sporotrichosis. The onset of the disease is sudden, characterized by fever, headaches, vomiting, chilliness, general aching, sweating, and prostration. The fever is intermittent and lasts from two to three weeks. In the ulcero-glandular type the patient usually complains, as a rule within eight hours, of pain in the regional lymph nodes. This may precede any evidence of reaction at the site of the inoculation.⁽⁸³⁾ According to Pinkerton and Markwith,⁽⁸³⁾ in about one-half the cases the lymph glands suppurate. Lymph glands, other than regional lymph glands, located in other parts of the body may be enlarged. The diagnosis of the condition is usually not difficult. Almost invariably there is a history of the patient's having handled some wild animal, especially rabbits. Following this, pain develops in the regional lymph nodes, which, in turn,

is followed by the development of a papule at the site of inoculation. This latter becomes necrotic and sloughs. The local lesion is accompanied by signs and symptoms of a general systemic infection, which makes the diagnosis relatively easy. A diagnosis should not be made, however, until agglutination tests are positive. The agglutination should not be attempted in every laboratory, because of the extreme danger of transmission of the disease to laboratory workers. Francis and others have emphasized that the organism may penetrate the unbroken skin. That the condition is not a rare one is shown by a report by Simpson⁽⁸⁴⁾ in which he states that 613 authentic reported cases had been collected up to May 1st, 1928. Of these 614 cases there were 25 deaths, a mortality of 3.7 per cent. There is considerable difference of opinion among authorities concerning the manner in which the local lesion should be treated. Simpson believes that incision and drainage of suppurating masses is the method of choice. Kavanagh,⁽⁸⁵⁾ on the other hand, believes that the infected gland should be treated conservatively. The general measures employed in treating the patient should be the same as those used in typhoid fever. Rest in bed for weeks is essential, and often several months elapse before the patient is able to resume work.

ANTHRAX.

Anthrax is an organism which is found frequently in the blood of many domestic, especially herbivorous, animals (cattle, sheep, horses, pigs, and goats). The organisms are spore forming, and after the death of the animal the blood or body fluids may contaminate the hide. The micro-organisms may remain as spores for years, and still be viable. The organisms may gain entrance to the body through the unbroken skin. The two types of anthrax are differentiated clinically. The first is that in which the lesion is localized in the skin, and is spoken of as a malignant pustule; the second is the internal type of anthrax, which is a septicemia and which

is almost invariably fatal. The malignant pustule is quite characteristic, and consists of a red area covered by a vesicle, the center of which is black and necrotic. Surrounding this lesion is a soft edema. As the lesion enlarges the necrosis in the center it becomes larger and numerous vesicles appear around the edge. The area of redness and induration increases.⁽¹¹⁾ The necrotic center then drops out in the benign cases in from four to nine days. In the severe cases the induration, and especially the edema, progresses, and a septicemia results, producing the death of the individual.

Pathologically the lesion differs from the ordinary pyogenic organism in that the reaction of the tissues is less marked in the former, the serum is poorer in leukocytes, and there is no marked liquifaction of tissue by the tryptic ferments set free by destroyed leukocytes.

The diagnosis of anthrax is made by finding the characteristic organisms in the discharge from the lesions. The lesions are highly infective and should be treated with caution. The treatment of anthrax consists of wide excision of the pustule, especially in those cases in which there is extensive edema. The use of the specific serum, Sclavo's serum, has given beneficial results. Recently Boggon reported 4 cases of anthrax treated with Sclavo's serum. In all four cases a very satisfactory recovery was obtained. Boggon⁽⁸⁶⁾ stresses the character of the early lesion, which differs considerably from that which is usually described in textbooks. He states that the lesions in the cases which he treated could only be distinguished clinically from a septic spot by the history of exposure, the dark center, and the area of whiteness immediately around it. The serum was administered into the gluteal region. The largest dose given in any particular case was 110 c.c. and the least 60 c.c. The initial dose was between 20 to 40 c.c., and doses were given, on subsequent days, of 20 to 30 c.c. Within two to three days

the lesion had completely disappeared. If the serum treatment is to be employed, it should be employed early, as well illustrated in a fatal case reported in the Weekly Public Health Bulletin, of New York,⁽⁸⁷⁾ in which serum was used relatively late.

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ETIOLOGY OF BERIBERI.—The results of experiments made by S. Matsumura, G. Kakinuma, K. Kawashima, K. Tanikawa, S. Ochiai, R. Miyata, K. Fujisaki, R. Kanao, K. Noguchi, K. Aoki, T. Sato, K. Ito and M. Suzuki, Chiba, Japan, on animals seem to prove that the beriberi bacillus should be judged the principal etiologic factor in experimental beriberi. A deficient diet, consisting of polished rice, seems to be merely a factor that constitutes a disposition to the disease. The feces of a series of patients with beriberi in several countries were examined for the beriberi bacillus. In ninety-eight subjects, or 74 per cent, the beriberi bacillus was present in the feces. The feces of a group of patients from the Chiba University Hospital, and the Chiba Military Hospital, none of whom had beriberi, revealed an incidence of about 1 per cent. In 400 soldiers of the First Regiment of Chiba a like incidence was found. A general examination of the feces of 2,103 inhabitants of the town of Narita, in the Chiba prefecture, was made as a further control. The period selected was from December, 1927, to January, 1928. From these specimens, 101 cultures of red colonies on saccharose plates were obtained. These cultures were tested with a specific serum, and only eighteen showed a positive agglutination. This is about 1 per cent of the total number of cases studied bacteriologically, and agrees very well with the results of the examination of the patients in the hospitals and the soldiers of Chiba. It will be seen that the incidence of the beriberi bacillus, therefore, among persons without beriberi is about 1 per cent. This is about the percentage of carriers of intestinal pathogenic bacteria in general. Fowls with beriberi were found to have developed specific agglutinations of considerable potency; usually titers of from 200 to 500 were obtained. If the disease were reinduced, after an initial recovery, the titer not infrequently rose to a higher value—1:1,000, or even more. Agglutination

tests performed on thirty consecutive patients with beriberi gave twenty-five, or 83 per cent, positive results. As controls for the specific agglutinations obtained in typical cases of beriberi, serums of normal persons were examined, the same organism and technic being used. Unless a positive test in a dilution of 1:50 was obtained, the result was deemed negative. Forty normal persons were thus examined, and three, or 7.5 per cent, were found positive. The authors conclude, therefore, that normal persons and experimental animals free from beriberi do not harbor the specific bacillus. When the specific bacillus is fed to experimental animals, the organism becomes implanted; then the specific symptoms follow. The serum of experimentally infected animals, as well as the serum from human cases of beriberi, contains potent specific agglutinins for the beriberi bacillus.—Jour. Am. Med. Assoc., 92:1325-1327, 1929.

PEPTIC ULCER AND CANCER OF STOMACH.—J. Shelton Horsley, Richmond, Va., stresses the point that since at least one-fifth of the cases of cancer of the stomach arise from peptic ulcer, it would seem advisable to watch patients with gastric peptic ulcer with great care. He reports a case that is interesting because of the relationship between ulcer and cancer. In this case it seems improbable that a small cancerous spot had existed for fifteen years during the time of the gastric symptoms. The logical conclusion is that this microscopic area of cancer had recently arisen in the region of a gastric ulcer as a result of the irritation of the ulcer. As two acini constituted all the definite cancerous tissue found in this case, it is possible that a thorough histologic examination of gastric ulcers may show the incidence of incipient cancer greater than it is generally believed to be.—Jour. Am. Med. Assoc., 92:1813-16, 1929.

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AGAIN THE BACILLUS CALMETTE-GUERIN.

Petroff (Petroff, S. H., *The Variability of the Tubercle Bacillus*, New England Med. & Surg. Jour., 200:1929, 1148) would explain the apparently harmless action of the B. C. G. vaccination by invoking the phenomena of microbic dissociation. It may be pertinent to recall that the observation of this particular bacteriologic peculiarity dates from the time that the study of bacteria was begun more than fifty years ago. Later, in the eighties, largely under the influence of Koch and Cohn, fixity of type became a dogma among bacteriologists. It is only within the last few years that men like Arkwright and de Kruif, according to Petroff, studied the variabilities

of microbic growth that takes place in the subculture from the original colony. At first this may be merely variation in cultural characteristics. In subsequent cultures deviations may take place in the virulence, the tinctorial properties and the biologic characteristics of the daughter organisms.

The importance of this property of microbic dissociation in relation to the tubercle bacillus, and particularly the bacillus of Calmette-Guérin, lies in the fact that apparently Calmette has dissociated from his original culture a strain of tubercle bacilli which are practically avirulent. Petroff, in a series of extensive studies, shows, however, that under certain conditions the avirulent organism (R) can be reverted to a virulent organism (S) after eight to ten passages and that the R organism, while only rarely producing progressive tuberculosis in the guinea pig, does occasionally cause active tuberculous lesions.

The gist of this experimental work is that neither you nor I would wish to have our children fed this vaccine which is so enthusiastically advocated by Parisian bacteriologists and pediatricians. If it is possible for the presumably avirulent cultures to revert back to the virulent type and if it is extremely difficult to eradicate all the virulent organisms, then the procedure must be fraught with danger. All this is said despite the continued reports from France of the value of the method.* Tubercle bacilli may linger long in the human body before exerting their pathogenic properties. Fortunately nature in the great majority of instances is capable of overcoming the hostile invaders.

BUSINESS, AND GOING GOOD.

According to the best read book in the world the great physician "went around doing good." Succeeding generations of

*Paris Letter, J. A. M. A., June 29, 1929, p. 2182.

physicians have been doing the same thing for over nineteen hundred years. The help of all doctors has always epitomized charitable actions and acts. Although there may be a tremendous spiritual satisfaction in doing good; such happiness is ephemeral at its best and does not pay for bread, shoes nor gasoline, not to mention medical books, surgical supplies of office rent to physician, much as he does of a beneficent character and much as he would like to do more, must face the realities of life. He can not live on air nor can he advance in skill and knowledge without an adequate income.

The medical man is notoriously a poor business man, and undoubtedly failure to attain sufficient and healthy yearly receipts may be attributed to unbusinesslike methods. In this connection a recent survey of the cause of failure in retail business is pertinent. Small stores failed not because of poor salesmanship, nor because of laziness, nor of general unaptitude, but they failed because of extending too much and too great credit. The physician could well take a lesson from this economic study. The average doctor earns enough, but does not collect it. He gives credit to every one and often prolonged credit. This he should not do. If patients fail to pay their bills, and an earnest effort is made to collect them without success then these debtors should be dropped from the books. The thought would be expressed, in criticism of this suggestion, that the doctor could not afford to lose these patient. If the small retail dealers, among whom competition is keener than in any other branch of business, can do this very thing, then surely the doctor can do likewise. Remember the most ungrateful patient is he who owes the most. It is he who will belittle and strike down his benefactor.

EXTENSION COURSES IN MEDICINE.

The form of post-graduate instruction known as an extension course has been em-

ployed in this country to an increasing extent in the past decade. Shortly after the war several distinguished Vienesese specialist is visited some of the large medical centers, giving a week's course of lectures in their particular field and then moving on to the next large city. This was found so profitable to the auditors that the method of instruction spread to communities smaller than the original centers and more isolated than were these larger places. At the present time these courses, given by some authoritative specialist, under the auspices of a university, a medical school, a county medical society or a local medical group, are quite popular in certain sections of the United States.

A modification of this plan has been instituted by four states, Wisconsin, North Carolina, Kansas and Oklahoma, whereby small cities and towns are provided once a week with an instructor who lectures and demonstrates cases for a certain number of weeks. The advantages of such a course of instruction are obvious. The instructor is brought to the group. A large number of medical men may be shown in the two to three hours a week period the newer developments in medicine and reviewed in some of the older phases of the subject at an expenditure of a normal amount of time and expense, factors which would prevent the majority of a group going to some large medical center for post-graduate instruction.

The idea of group instruction in their own localities should have even a greater vogue than it has at present. It is a type of graduate study which could be very well employed throughout the South, with its relatively large number of small towns and cities, often far distant from medical contacts. It certainly offers a possibility of increasing interest in medical societies which, under some dynamic secretary, might well arrange such courses to be held weekly for eight to ten weeks during the least active periods of the year.

HOSPITAL STAFF TRANSACTIONS

VICKSBURG HOSPITAL STAFF MEETING,
JUNE 6, 1929.

Abstract: Benign Tumor of Left Fibula and Tibia.—Dr. W. H. Parsons.

White male, 18 years of age. Family history and past personal history irrelevant.

C. C. Last season while playing foot ball the leg was hurt, but not sufficiently to cause him to discontinue playing. Later conscious that the left leg was slightly swollen and since the date of the injury there has been a sensation of feeling tired in the leg. Recently examined by his home physician who made a diagnosis of tumor of the bone. General examination entirely negative except for swelling over the lower third of the left leg. A remarkable vigorous young individual and in every other respect normal.

Roentgen-ray disclosed a tumor in the lower third of the fibula, which was felt to be benign. The tumor appeared to join the tibia.

Operation was done. The fibula was exposed, a Gigli saw was passed well above the tumor, the bone divided, divided also below the tumor and the fragment of fibula containing the growth was removed. The tumor was attached to the posterior surface of the tibia and it was necessary to remove the posterior half of a segment of the tibia. Recovery from surgery was uneventful.

Subsequent roentgenograms showed the tumor to have been cleanly removed.

Biopsy by Bloodgood of Baltimore, showed the condition to be benign. It was his opinion that diagnosis would lie between osteomyelitis Garr or exostosis, benign.

Roentgen-ray study one month after surgery showed splendid regeneration of bone and no evidence of tumor.

The history in this case, that is, of trauma occurring in a young individual and of tumor, which appeared to be growing rather rapidly, would of course strongly suggest sarcoma. The case is presented because of the comparative rarity of bone tumors and to exemplify the fact that though the history would be quite suggestive of malignancy biopsy disclosed the lesion to be undoubtedly benign.

VICKSBURG SANITARIUM AND CRAWFORD
STREET HOSPITAL STAFF MEETING
JULY 10, 1929.

Abstract.—Ileo-Colitis in a Child of Fourteen Months; Intraperitoneal Blood Transfusion.—Dr. L. J. Clark.

Patient—White, male, age 14 months; admitted to hospital June 22, 1929.

Complaint—Loose bowels; restlessness; fever. On set about six days before admission, and following whooping cough. Mother noticed that child became fretful and restless, and bowels became loose. Condition rapidly worse and in past 72 hours stools have contained blood and mucus; stools every 30 minutes; no vomiting. Temperature 100° to 102° F. Has been eating most anything, principally raw cow's milk.

Past History—No diseases except whooping cough.

Family History—Father, mother, two brothers, and one sister living and well.

Physical Examination—Temperature 102° F.; pulse 140, regular; respiration 28, regular. Fairly well developed but poorly nourished, apparently very ill and restless. Tongue coated; abdomen slightly distended with some generalized soreness. Otherwise, not remarkable.

Blood—Leukocytes, 22,900; Differential leukocyte count small lymphocytes, 16, large lymphocytes, 2, large mononuclears, 17, polymorph. neutrophils, 65, of which 63 were immature forms; no malaria found. On June 24, leukocytes were 20,200, with 34 neutrophils of which 32 were immature forms. On July 4, leukocytes were 25,500, with 77 neutrophils of which 57 were immature forms.

Feces—Repeated examinations showed some to much mucus, chemical blood, 1-plus to 3-plus; microscopic blood, rare to numerous red cells; leucocytes, rare to numerous. No amebae or dysentery bacilli were found.

Stomach washings showed chemical blood.

Course—Patient was put to bed and all food withheld except barley water and a small amount of acidophilus milk. Treatment: bismuth subnitrate, paregoric; tannic acid rectal irrigations; glucose solution subcutaneously. At first there was slight improvement but in spite of all treatment bowels were still acting five or six times a day and still contained blood. Child was rapidly wasting. A suitable blood donor was found with some difficulty and 250 cc. of blood, citrated, were given intraperitoneally. Patient at first became much distended but following gastric lavage and colon irrigations, there was much improvement in 48 hours. About four days later there was slight recurrence of diarrhea and fever, which lasted one day. Has improved rapidly since and was discharged today, recovered but much emaciated. Child is now taking protein milk and some acidophilus milk as tolerated.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of July, besides the regular meeting of the Board of Directors, the second quarterly executive meeting was to have been held but because of the lack of a quorum adjourned. This was the last meeting until October, the Society going into summer recess July, August and September.

The third quarterly premium on the second annual premium of group insurance was paid on July 5, with 239 members holding policies.

An organization meeting of the Women's Auxiliary of the Orleans Parish Medical Society was held on Tuesday morning, July 9, with the thirty-one charter members enrolled. The following officers were elected:

President—Mrs. J. A. Storck.

First Vice-President—Mrs. I. I. Lemann.

Second Vice-President—Mrs. John H. Musser.

Treasurer—Mrs. Geo. J. Taquino.

Recording Secretary—Mrs. A. L. Levin.

During the past month the following doctors were elected to Active Membership:

Drs. A. F. Brock, Jr., James J. Baron, Cuthbert J. Brown, Thomas E. Clements, P. F. Wilson, Clarence P. May, A. N. Houston, Mannie Mallo-witz, and W. R. Strange.

Do not fail to send in your picture for the History of the Orleans Parish Medical Society.

TREASURER'S REPORT.

Actual Book Balance, May 31, 1929.....	\$2,260.73
Receipts for insurance.....	700.20
Receipts during June.....	412.50
	<hr/>
	\$3,373.43
Expenditures in June.....	\$1,962.69
	<hr/>
ACTUAL BOOK BALANCE.....	\$1,410.74

LIBRARIAN'S REPORT

Two hundred sixty-nine books have been added to the Library during June. Of these 124 were received by gift, 124 by binding, 12 by subscription, and 9 from the New Orleans Medical and Surgical Journal. A notation of new titles of recent date is appended.

Donors for the month are as follows: Dr. W. A. Lurie, Mayo Clinic, University of Western Ontario, University of Nebraska, Rochester Academy of Medicine, and Dr. E. A. Socola.

Two hundred twenty-five volumes from our

duplicate collection have been sent on permanent loan basis to the Hotel Dieu Library. This is the third hospital library in which we have placed books in this way.

NEW BOOKS

Ewing—Manual of the External Parasites, 1929.

Baylis—Manual of Helminthology, 1929.

Thompson—Protozoology, 1929.

Malloch—William Harvey, 1929.

Burke—Treatment of Venereal Diseases, 1927.

McClanahan—Pediatrics, 1929.

Gaskell—What Is Life, 1928.

Warthin—Old Age, 1929.

Far Eastern Association of Tropical Medicine—Transactions of Eighth Congress, part 1, 1928.

Rockefeller Foundation—Methods and Problems of Education, 1928-29.

U. S. Army—Medical Department in the World War, volume 3, Finance and Supply, 1928, and volumes 10, Neuropsychiatry, 1929.

H. THEODORE SIMON, M. D.,
Secretary.

MINUTES OF ORGANIZATION MEETING OF THE WOMAN'S AUXILIARY OF THE ORLEANS PARISH MEDICAL SOCIETY HELD JULY 9, 1929.

Mrs. Oscar Dowling, President of the State Auxiliary, called the meeting to order in the absence of Mrs. Ralph Hopkins, Chairman, who was called out of the city.

Mrs. Dowling suggested that the Constitution and By-Laws of the American and Southern Woman's Auxiliaries be adopted. Upon motion by Mrs. Arthur Weber, duly seconded, the Constitution and By-Laws of the American and Southern Woman's Auxiliaries were adopted.

The Chair stated that the purpose of this organization is to promote the aims of the medical profession and to promote fellowship in the doctors' families, to assist in the entertaining of the Louisiana State Medical Society and of such others as may be desirous of our co-operation.

Upon motion a Nominating Committee was appointed as follows: Mrs. Homer Dupuy, Mrs. D. N. Silverman, Mrs. E. Denegre Martin, and Mrs. W. P. Gardiner. This committee retired from the meeting room in order to name candidates for election. After a brief recess the report of the

Nominating Committee was read, consisting of the following names:

President—Mrs. J. A. Storck.

First Vice-President—Mrs. I. I. Lemann.

Second Vice-President—Mrs. John H. Musser.

Treasurer—Mrs. Geo. J. Taquino.

Recording Secretary—Mrs. A. L. Levin.

Mrs. Weber moved that the committee's nominations be voted on as a whole. This was seconded and carried and the officers were elected.

The dues of the Auxiliary were discussed, and it was suggested that the organization adopt the same dues as the Shreveport Auxiliary—\$1.25 a year. One dollar for the Parish dues and twenty-five cents for the National dues.

Mrs. Dowling stated that Mrs. Arthur Herold of Shreveport has been sent to Portland as the State's first delegate to attend the American Medical Auxiliary.

No meeting date was fixed because of the summer months, but Mrs. Storck expressed the intention of calling a meeting of the officers in the next few weeks, when a meeting date will be named.

Upon motion by Mrs. Levin the meeting adjourned.

MRS. A. L. LEVIN,
Recording Secretary.

CHARTER MEMBERS WOMAN'S AUXILIARY, ORLEANS PARISH MEDICAL SOCIETY

Mrs. E. E. Allgeyer
Mrs. S. M. Blackshear
Mrs. W. R. Buffington
Mrs. Jules M. Davidson
Mrs. Oscar Dowling
Mrs. Homer Dupuy
Mrs. Jules Dupuy
Mrs. Frederick L. Fenno
Mrs. W. P. Gardiner
Mrs. R. L. Gordon
Mrs. Amedee Granger
Mrs. J. S. Hebert
Mrs. Ralph Hopkins
Mrs. Adolph Jacobs
Mrs. Otto Joachim
Mrs. F. E. LeJeune
Mrs. A. L. Levin
Mrs. Louis Levy
Mrs. E. Denegre Martin
Mrs. Monte F. Meyer
Mrs. C. L. Peacock
Mrs. J. Frank Points
Mrs. Robert H. Potts

Mrs. S. J. Rosenthal
Mrs. P. B. Salatich
Mrs. Daniel N. Silverman
Mrs. J. A. Storck
Mrs. Geo. J. Taquino
Mrs. T. J. Walshe
Mrs. H. W. E. Walther
Mrs. J. W. Warren
Mrs. Arthur Weber

The following is a brief summary of the annual receipts and expenditures of the Orleans Parish Medical Society:

REPORT OF GENERAL FUND, 1928

Balance on hand January 1, 1928.....	\$ 485.86
Receipts	24,951.04
Expenditures	24,196.96
Actual book balance.....	1,239.94
Total office expenditures.....	178.68
Incidentals	606.27
Total Special receipts.....	3,068.82
Total special expenditures.....	9,578.43

Respectfully submitted,

JOHN A. LANFORD, M. D.,
Treasurer.

ANNUAL REPORT OF SECRETARY, 1928

In presenting this annual report of the happenings of the Society during this past year, many of the facts mentioned will be further enumerated by other officers and chairmen of various committees. I beg your indulgence in this repetition which is necessitated by your By-Laws.

1928 has seen this Society again go through one of the most active years in its history.

During the year there has been celebrated the fiftieth year of its existence, carrying on for these fifty years by educating and enlightening its members through its scientific sessions. Adequate exercises commemorating this half century anniversary were held in the past month of May.

MEMBERSHIP

The year ended with the total membership of 515, the largest membership yet reached. Of this number 487 are Active Members, 20 Associate Members, 6 Interns Members, and 2 Honorary Members. Losses during the year number 18. These were: Deaths, 4; removals, 9; resignations, 2; dropped for delinquency, 2, and dropped for unethical conduct, 1. There was a gross gain of 17 and a net increase of 12. This net increase is one of the largest increases since the year following the World War, and this fact should encourage the membership to bring in the remaining forty or fifty eligible licensed practitioners of medicine in Orleans Parish.

MEETINGS

Your Board of Directors has held eleven meetings. All of the members of the Board worked diligently in an endeavor to dispose of matters brought before them, and each and every one deserves your consideration for their attendance and their willingness to co-operate with the President and other officers.

The Society has held 17 general meetings during the year. Of this number there was the installation meeting, three quarterly executive meetings were extremely interesting. All phases of Hospital Staff, one joint clinical meeting with the U. S. Marine Hospital Staff, one joint meeting with the New Orleans Gynecological and Obstetrical Society, and one joint meeting with the Louisiana Dermatological Society. The average attendance at these meetings was 107, which is the largest average attendance in our history.

All of the clinical meetings and scientific meetings were extremely interesting. All phases of medicine and surgery and their allied specialties were dealt with.

From the scientific standpoint the Society has had a most excellent year. This I feel was due to the untiring efforts of the Scientific Essays Committee and its Chairman, Dr. I. M. Gage.

Twenty-three scientific papers were presented by the membership and five by the following guests:

Dr. R. A. Cutting of New Orleans.

Dr. W. W. Chipman of Montreal.

Dr. J. O. Polak of Brooklyn.

Dr. A. L. Glaze of Birmingham.

Dr. B. E. Denney of Carville, La.

STANFORD E. CHAILLE MEMORIAL ORATION

The third oration commemorating the memory of the illustrious and well known Dr. Stanford E. Chaille was held December 4, 1928. Dr. Carl J. Wiggers, Professor of Physiology of Western Reserve University, Cleveland, was the orator. The attendance on this occasion was excellent and was in well keeping with the auspiciousness of this oration.

The By-Laws revised in 1927 were put in printed form, each member being presented with a copy. There has been no revision of the present By-Laws.

ANNUAL BANQUET

The Society, in accordance with custom, has held its annual banquet following the closing of the voting on election day. The attendance was poor, and if the annual banquet is to be a continued custom an endeavor should be made to

increase the participants, which can only be done by repeated and early circularizing the membership.

LIBRARY

There has been a correlation of the Orleans Parish Medical Society Library and the Tulane Medical School Library. Both of these libraries now function with Miss Mary Louise Marshall as Assistant Librarian and Miss Marion Billon as Miss Marshall's assistant in our own library.

This present system of library management seems very satisfactory.

New furniture in the form of reading tables and chairs has been supplied during this past year. A new reading room and a duplicate room has been added. This has increased the reading space, which is absolutely necessary.

The Board of Directors has sanctioned the Society joining the Association of Commerce for the year 1928.

Among the added equipment and facilities has been the purchase of a fire proof safe, in which the Minutes and important records and transactions of the Society are now kept.

The installation of a telephone booth, with a private line for use by the membership has been installed. A telephone on meeting nights is now placed outside of the door of this assembly room.

Two oil paintings of two illustrious past officers of this Society have been resurrected by our President, repaired and are now hanging on these walls.

COMMITTEES

During this year there has been marked activity in some of the committees.

The Hospital Abuse Committee, with its Chairman, Dr. A. E. Fossier, has been in constant contact with the new administration of Charity Hospital, and has a most interesting report, which will be read later.

The Committee on State Medicine and Legislation has had a most active year, and working in conjunction with a similar committee of the Louisiana State Medical Society it has helped in a most commendable manner at this past meeting of the Legislature.

The Publicity Committee, which has been inaugurated with the past revision of the By-Laws, has functioned actively, and has had at its disposal a paid publicity man to keep it in contact with the daily papers.

The Periodic Health Examination Committee has held its second annual "Longer Life Week" with the same marked success which witnessed the inauguration last year of this plan of periodic health examinations.

HISTORY

A history of the fifty years of existence of the Orleans Parish Medical Society has been sanctioned by the Board of Directors and has been written by one of our past Presidents, Dr. A. E. Fossier. This manuscript is practically complete and at some later date when the pictures of the membership and officers are completed will be published and presented gratis to the membership.

The Society, through its pediatric specialists, and its President, co-operated actively with the Lions Club for a "Better Babies Week," which, as we all know, was a huge success.

GROUP INSURANCE

Group insurance, begun one year ago, has proven quite a success. At present 240 members are holding policies, which is practically the same number as first originating. During the year policies were paid to the beneficiaries of two deceased members.

Miss Mary Louise Marshall, Assistant Librarian, has again been sent to the Medical Library Association meeting. Representation at this meeting is considered very valuable by the Board, and likely a delegate will be sent annually.

During the year the following Delegates and Alternates to the Louisiana State Medical Society have been elected for a term of two years:

Delegates	Alternates
Dr. S. M. Blackshear	Dr. F. M. Johns
Dr. H. B. Gessner	Dr. H. Theodore Simon
Dr. F. J. Chalaron	Dr. J. Birney Guthrie
Dr. L. L. Cazenavette	Dr. John F. Dicks
Dr. H. W. Kostmayer	Dr. Maurice J. Gelpi
Dr. E. Denegre Martin	Dr. J. T. O'Ferrall
Dr. E. L. Irwin	Dr. L. A. Fortier
Dr. P. Graffagnino	Dr. C. J. Bloom
Dr. P. A. McIlhenny	Dr. W. J. Durel
Dr. B. A. Ledbetter	Dr. Adolph Jacobs
Dr. Marcy J. Lyons	Dr. Muir Bradburn

OFFICE ORGANIZATION

The work in the office has increased considerably owing to the detail work of collecting and paying the premiums of the group insurance, and also on account of the many circular letters sent to the membership notifying them of routine matters.

I wish to extend my sincere thanks to Miss Lucille Maier, our Assistant Secretary-Treasurer, for her faithfulness and promptness in her endeavors to co-operate.

I wish to thank the President and each member of the Board of Directors for their hearty co-operation, and in conclusion I express my gratitude to the general membership for the opportunity they have given me to serve the Society.

Respectfully submitted,

H. THEODORE SIMON, M. D.,
Secretary.

INAUGURAL ADDRESS OF PRESIDENT DR. ERASMUS DARWIN FENNER

Mr. President, Members of the Society, and Ladies and Gentlemen:

To have been elected to the presidency of this Society, without opposition, and therefore by general consent, is a tribute of amiability and friendship on the part of its members for which I cannot but be deeply grateful. It is the sort of thing that warms the cockles of the heart, and makes the recipient feel that he must do something to show that he is not unworthy of the generous kindness of the friends who have shown themselves to be more numerous than he, perhaps, had realized.

Organized just half a century ago, in 1878, at a time when two rival medical societies had been leading a hostile, precarious and anaemic existence, it succeeded in fusing the two groups, and has slowly, but surely, gathered to its heart the great majority of the ambitious and representative doctors of our city. It welcomes all fit and worthy men, and rejoices over each accession from the minority who still remain outside the fold.

Closely affiliated with the American Medical Association, and the Louisiana State Medical Society, the Orleans Parish Medical Society stands for Organized Medicine in this city. And organized Medicine, Ladies and Gentlemen, is a fine force and a real civic asset in any community. It is, in fact, the original Endeavor Society—endeavoring always to mitigate suffering, to prolong life and to prevent disease, as well as to cure it, by searching for its causes, by learning how to combat or to remove them, and by educating the public in methods of self protection.

Whatever may be the weaknesses and failings of the individual physician, the medical profession as a whole, since the days when Hippocrates imposed the famous Oath, one of whose clauses

affirmed that "Into whatever houses I enter I will go for the advantage of the sick, and will abstain from every voluntary act of mischief or corruption," stands, and has always stood, for utter disregard of personal convenience, comfort or safety; for complete devotion to the welfare of the sick; for a tireless search for methods to control and prevent sickness.

New methods of treatment, new pharmaceutical products, discoveries of the causes of infections, are being constantly announced by one or another of the army of doctors throughout the world, and are eagerly tested out. Too often the enthusiastic claims of the originators fall before the critical investigations, and accumulated experience of others. Frequently revision results in a real gain. The keynote of modern medical effort, however, is prophylaxis—the prevention of disease. And to prevent disease we must first know its cause. Given this knowledge, the discovery of a cure is brought appreciably nearer.

Political historian record with singular pleasure the achievements of the great captains and conquerors of the world—Darius, Hannibal, Julius Ceasar, Napoleon. But to satisfy their lust for power, and to perpetuate their fame, how many countless thousands laid down their lives? And death is the conquerer, in the last analysis, against whom mankind has been vainly fighting throughout the centuries. The fear of death is universal. No matter how wretched his existence, the average man struggles to prolong it. Philosophers, and religious teachers of every creed, have sought to find a formula which would mitigate the dread with which the entry to "that undiscovered country from which no traveler returns" is always viewed. The Christian consoles himself with the thought of Paradise; the Mohamedian by picturing a heaven graced by hours; the Stoics of ancient times by estimating all mundane things as trivial. Marcus Aurelius beautifully expresses the attitude of the Epicurean Stoic when he urges us to "Consider often how many wise physicians, who have frequently knit their brows on seeing the signs of death in their patients, are dead themselves; how many astrologers, who have ostentatiously foretold the deaths of others; how many philosophers, who have discoursed without limit upon death and immortality; how many warriors who have slaughtered multitudes; how many tyrants who have exercised their power of life and death arrogantly, as though they themselves were immortals; nay, how many whole cities, if I may so speak, have died—Helice, Pompeii, Herculaneum, and others innumerable."

"Then think over those you have known, one by one; how one buried another, and was in turn buried by a third; and all this in so short a time."

"In brief, look at all things, and see how cheap and ephemeral they are—but yesterday a bit of mucous, tomorrow a mummy or ashes. Spend this brief moment of time as Nature dictates, and then depart, just as the olive falls when it is ripe, blessing the Nature that begot it, and thankful to the tree upon which it hung."

In contrast to this fatalistic attitude is the constant struggle of the physician to prolong life. The medical historian delights to honor the memories of those great men, the product of whose indefatigable industry and scientific curiosity had resulted in so much benefit to mankind—that bold pioneer, Edward Jenner, who gave the world vaccination against smallpox; Harvey, who demonstrated the circulation of the blood; John Hunter, who did so many useful things; Pasteur, whose work upon fermentation, while he was seeking a cure for the blight upon the vineyards of France laid the foundation for the whole modern system of bacteriology, and directed the energies of the immortal Lister to the introduction of antiseptic surgery; our own Marion Simms, the father of gynecology; Kock, who discovered the true cause of the "white plague," tuberculosis; Klebs and Loeffler, who taught us the cause of diphtheria; Noguchi, Carroll, Ried, and the other members of the commission which solved the problem of Yellow Fever; these, and many others, are creditors to whom mankind can never pay its debt.

In casting up the account of the innumerable multitudes whose lives have been saved as a result of the activities and self sacrifice of its investigators, is it any wonder that the medical profession should be proud of its past, proud of its present and prouder still of its hopeful future? Modern medical research has expanded the field to such an extent that it is too much for any ordinary mind—hence the specialism of today. But the currents of these special investigators all flow into the common pool of medical knowledge, and are assimilated and coordinated there for the general good.

In this era of marvels, when the telegraph, the telephone, the phonograph, radio, the aeroplane, have become so commonplace that they arouse no special wonder, the rending of the veil of mystery which shrouded the causation of diseases like Yellow Fever, tuberculosis, typhoid fever, the Asiatic plague, syphilis, the African sleeping sickness, diphtheria, scarlet fever, and even measles (it seems likely), is accepted without excitement as to be expected. But with the discovery of their causes has come the understanding of how to prevent them. Yellow Fever, whose dread epidemics were the terror of this whole section, has been practically eliminated from our midst; typhoid fever, which in days gone by killed more soldiers than the bullets of the enemy, has become a

trivial factor in the sick roll of properly regulated camps; vaccination against small pox has put an end to the fearful visitations of this scourge; diphtheria and scarlet fever can now be prevented by prophylactic injections, and the former, at least, cured by the timely administration of anti-toxin.

The reverse of this paean of triumph is found in limitations in our knowledge. We know the cause of pneumonia, we even know and recognize its four types, but we know no cure; all we can do is to assist nature in the struggle. Typhoid fever could be abolished, a whole population could be protected against smallpox, diphtheria, scarlet fever, were it but possible to apply and enforce our knowledge. Once the disease has gained a hold, however, our defensive weapons are but too often inadequate. Ignorance of the means of salvation, passive and active, resistance, on the part of the people, are the enemies who join forces with disease. Antivaccinationists beseege legislatures to make vaccination optional instead of compulsory; societies for the prevention of cruelty to animals strive to forbid animal experimentation, without which progress in the conquest of disease is impossible; Christian Scientists reject the aid of Medicine, and rely upon prayer; the use of the vaccines against diphtheria and scarlet fever is rejected or neglected. Added to these is our recognition of the fact that much as we have learned, there is still so much to learn, and that so frequently we are helpless in the face of established disease.

Few realize the humility and abasement of spirit that overtake the earnest physician who watches the inexorable approach of death towards his patient. He has done his best, but in the face of the result, how futile it seems! It is this humility which impels us to lengthen the period of preparation of candidates for the degree of Doctor of Medicine; to insist that the verdict of fitness rendered by the school from which a diploma was issued should be reviewed by a State Board of Medical Examiners; to demand a minimum standard of efficiency from every hospital for the sick; to institute campaigns for the education of the public in the methods of preventing disease; and to insist that no medical discovery which promises to be of value in the cure of disease shall be kept secret, or monopolized, for the benefit of its discoverer.

These lofty and altruistic ideals of the medical profession are our proud heritage from generations of our forbears. Ours the duty to maintain them.

LIBRARIAN'S REPORT FOR 1928.

The outstanding feature of the year's work in the library has been the new physical arrange-

ment and additional personnel providing closer relationship with the Tulane Medical Library. Miss Marshall having been appointed general director of the two libraries, with offices in the Orleans Parish Medical Society, having assistance in each and a direct connection by means of a new stairway, facilitates the administration and utilization of two large collections of medical literature. Another advantage, from a financial standpoint, of this closer cooperation is the elimination of duplication in subscriptions of books and magazines. The Tulane library is now making it a point to specialize in journals and texts dealing principally with the fundamental medical sciences placing our library in a better position to acquire literature relating to the clinical branches.

The new books added during 1928 totaled 682. They were received from:

Binding	215
Gift	253
N. O. Med. and Surg. Jour.....	164
Exchange	17
Purchase	21
Subscription	12

A notation of new titles is made each month in the local journal.

The total number of books in the library is 13,790.

Gifts were received from 37 sources, including individuals, libraries and medical societies in different parts of the country.

Considerable new equipment has been added as follows:

A new reading room was built and shelved.

A new duplicate room was built and shelved.

The reading rooms were refurnished with 5 tables and 20 chairs.

There were added 2 five-section tiers of double-faced shelving, a new typewriter, desk and chair, 2 gas stoves, telephone extension, office for the assistant librarian.

Miss Marshall was sent to the Meeting of the Medical Library Association in New York, serving as a member of the Executive Committee and Chairman of the Membership Committee.

For the coming year she was reappointed as Chairman of the Membership Committee and a member of the Publication Committee.

While in New York she visited the following libraries:

New York Academy of Medicine.

Library of the County of Kings Medical Society (Brooklyn).

Rockefeller Institute of Medicine Library.

Library of Columbia University College of Physicians and Surgeons.

Respectfully submitted,

DANIEL N. SILVERMAN, M. D.,

Librarian.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

ST. LANDRY PARISH MEDICAL SOCIETY OPELOUSAS, LOUISIANA.

—NOTICE—

At a special business meeting of the St. Landry Parish Medical Society held at Opelousas, Louisiana, on June 6, 1929, five resolutions concerning the relationship between the Parish Health Unit and the Parish Medical Society were adopted.

It was voted to send a copy of these resolutions to the following organizations: (1) Louisiana State Board of Health, (2) Louisiana State Medical Society, (3) All Parish and District Medical Societies in Louisiana.

Signed,

WILSON W. KNOWLTON, M. D.,
Secretary-Treasurer, St. Landry Parish
Medical Society.

The following resolutions were adopted by the St. Landry Parish Medical Society at a Special business meeting of that body on June 6, 1929.

Whereas, the physicians of St. Landry Parish desire to strengthen the ties of friendship and cooperation between the local Health Unit and the physicians for the benefit of the people of St. Landry Parish generally;

Be It Hereby Resolved, That:

(1) For the purpose of clarification, the term "indigent" as herein after used shall apply to those individuals who are unable to care for themselves financially and who are therefore of necessity treated free of charge by their respective family physicians.

(2) Anti-rabic vaccine and other biologicals (except diphtheria toxin-antitoxin mixture, small-pox vaccine, and typhoid vaccine) should be furnished free of charge to indigents only and then only upon direct request from their respective family physicians.

(3) The best method for helping people to have their children's physical defects corrected before those defects have done too serious harm to the children is for the people themselves, heeding the examinations and reports of the local Health Unit, to take their children in person to their own family physicians for advice and assistance; in the case of indigents this work should be undertaken after a consultation involving the family physician, the director of the Health Unit, and the specialist concerned has been held.

(4) Biological products of any nature (including diphtheria toxin-antitoxin mixture, small-

pox vaccine, and typhoid vaccine) should not be administered free of charge to everyone without regard to financial status except (a) in the case of school children, and (b) in the face of emergencies of epidemics; and furthermore in the case of school children a urinalysis should be done before the administration of antitoxin to children suspected of having Bright's Disease, heart disease, or pulmonary tuberculosis.

(5) The St. Landry Parish Medical Society extends its help and assistance to the local Health Unit chiefly toward the eradication of malaria, tuberculosis, hookworm, pellagra, beriberi, and other infectious diseases generally; and with this end in view each physician in St. Landry Parish shall take upon himself the responsibility of promptly reporting to the local Health Unit each and every case of any communicable disease encountered by him in his practice.

Resolution adopted by the St. Landry Parish Medical Society at the meeting of the Society, July 17, 1929.

Resolved, That the St. Landry Parish Medical Society reluctantly accepts the resignation of Dr. W. W. Knowlton as Secretary-Treasurer of this body, necessitated by his removal to a wider sphere of sanitary labor, in the State of Massachusetts, and in doing so this Society expresses its high appreciation of Dr. Knowlton, as a gentleman and medical sanitarian, ever since his advent in our midst and especially since his connection as Secretary-Treasurer of this body. It further expresses the hope that the same measure of success that has characterized his labors in this Parish, will continue in his new field of activity; as a further mark of appreciation, Dr. Knowlton be elected an Honorary Member of this Society; That this resolution be spread on the minutes and a copy sent to Dr. Knowlton and to the official Journal of the Louisiana State Medical Society.

UNITED STATES PUBLIC HEALTH SERVICE.

JUNE 19, 1929.

Surgeon W. C. Rucker. Directed to proceed from New Orleans, La. to Atlantic City, N. J. and return, for the purpose of attending the meeting of the American Hospital Association, June 17-21.

A. A. Surgeon C. C. Applewhite. Directed to proceed from Jackson, Miss. to Greenwood, Miss. and return, to inspect and condemn unserviceable property at the Malaria Laboratory. June 14, 1929.

An institute for Tuberculous Workers will be conducted at Nashville, Tenn., September 10 through 24, 1929, under the auspices of Vanderbilt University, in co-operation with the National Tuberculosis Association, the Southern Conference on Tuberculosis, the Tennessee Tuberculosis Association, and the Tennessee State Department of Health.

This training course will be conducted by Philip P. Jacobs, Ph.D., Director, Publications and Extension Service of the National Tuberculosis Association. The committee on local arrangements and program includes James P. Kranz, Southern Conference on Tuberculosis, Dr. E. L. Bishop, Tennessee State Department of Health, Dr. W. S. Leathers, Vanderbilt University School of Medicine and S. L. Smith, Field Worker, of the Rosenwald Foundation.

The Institute has four main objectives: To assist workers already in executive positions in the tuberculosis field to assume positions of greater responsibility or to become more useful in their present positions; to prepare for executive positions those who have not had experience in the tuberculosis field; to give to volunteer workers a more comprehensive knowledge of the administrative problems involved in this work; to aid in the standardization of methods and programs of tuberculosis work.

Application for the Institute and further information can be secured from James P. Kranz of the Tennessee Tuberculosis Association, 405 Chamber of Commerce Building, Nashville, Tennessee.

YOUR FAMILY PHYSICIAN—Magazines of the day are replete with articles advising the public how best to invest their money. All very good. Even more pertinent is the security of health and life. You understand the purchase of stocks and bonds, but do you know how to buy yourself a doctor?

You have Dr. Jones because he belongs to your church. Dr. Smith is an examiner for your lodge. Dr. Brown is a good patron of your bank. Wonderful security? How much money would you lend him on the strength of it?

Yet you freely entrust to his custody the health and lives of yourself and family. "What fools we mortals be?"

Do you know aught of his education? Where he practiced before entering your community? Why he left? No, you don't know any of these things. You assume that he passed the State Board of Medical Examiners and has a license to practice medicine in your state. All right as far as it goes.

How then shall we select a family physician?

Choose first a man who is honorable, honest and conscientious. He will afford you greater protection than the law. Secondly: one of good habits. Thirdly: one of sound judgment. This is a wonderful asset to a physician.

Beware of the doctor who is not a member of his County Medical Society. It is true that many poor ones belong, but few good ones do not. Select, if possible, a man who is on the staff of a recognized hospital. The directors of a hospital are in a better position to judge of his qualifications. Regard with suspicion a doctor who objects to meeting others in consultation. His ignorance is probably worthy of concealment.

Consider twice the doctor who demands payment in advance. True, "The laborer is worthy of his hire," but a dollar is dearly earned that costs us the respect of others.

Everything considered, doctors are not very different from other commodities. The cheapest is not always the best buy; and those who charge most sometimes sell inflated values.

Would that we might recall the old type of family physician, he who radiates sympathy and kindness. Some doctors are so cold-blooded that they have to carry alcohol in their radiators to keep from freezing. We need more of the spirit of humanity and less of the spiritus frumenti.

With the best information available, the choice of a physician may, for many, prove something of a lottery; but if fortune does not favor you in the first draw, you can always call for a new deal.

Then go to him, on every birthday, for a health inventory. Ask him to help you keep well.—Jackson Daily News, Jackson, Miss., June 4, 1929.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

Dr. H. A. Gamble President of the Mississippi State Medical Association, has announced the Chairmen of Sections and Committees for the coming year as follows:

Section on Medicine—Dr. G. Y. Gillespie, Greenwood.

Section on Surgery—Dr. H. R. Shands, Jackson.

Section on Hygiene and Public Health—Dr. Hardie R. Hays, Laurel.

Section on Eye, Ear, Nose and Throat—Dr. C. A. Williams, Gulfport.

Section on Radiology—Dr. C. C. Hightower, Hattiesburg.

Committee on Publication—Dr. T. M. Dye, Clarksdale; Dr. R. W. Hall, Jackson; Dr. R. M. Donald, Moorhead.

Committee on Public Health and Legislation—Dr. Felix J. Underwood, Jackson.

Committee on Medical Education—Dr. J. S. Sanders, Leland; Dr. John Darrington, Yazoo City; Dr. R. J. Field, Centerville.

Committee to Attend State Teachers' Association—Dr. R. C. Smith, Drew; Dr. M. J. Few, Rolling Fork; Dr. W. A. Carpenter, Cleveland.

Committee on Scientific Work—Dr. T. M. Dye, Clarksdale; Dr. J. S. Sharp, Grenada; Dr. W. A. Dearman, Gulfport.

Committee on Hospitals—Dr. W. H. Southerland, Booneville; Dr. C. T. Chamberlain, Natchez; Dr. S. H. Hairston, Meridian.

Committee on Necrology—Dr. A. G. Everett, Friar Point; Dr. L. J. Hightower, Itta Bena; Dr. Charles Murray, Ripley.

The following physicians were chosen by the Mississippi State Board of Health in session June 24, 25 and 26, 1929, to serve as County Health Officers for the period July 1, 1929, to June 30, 1931:

Adams County—Dr. E. D. Blackwelder, Natchez. Alcorn County—Dr. M. W. Robertson, Rienzi. Amite County—Dr. C. W. Stewart, Osyka. Attala County—Dr. J. W. Comfort, Kosciusko. Benton County—Dr. Frank Ferrell, Ashland. Bolivar County—Dr. R. D. Dedwylder, Cleveland. Calhoun County—Dr. Eli Powell, Vardaman. Carroll County—Dr. J. P. T. Stephens, Vaiden. Chickasaw County—Dr. J. Rice

Williams, Houston. Choctaw County—Dr. W. D. Arnold, Ackerman. Claiborne County—Dr. W. N. Jenkins, Port Gibson. Clark County—Dr. D. S. Johnson, Quitman. Clay County—Dr. J. C. Ellis, West Point. Coahoma County—Dr. D. V. Galloway, Clarksdale. Copiah County—Dr. J. A. Milne, Hazlehurst. Covington County—Dr. G. T. Cranford, Seminary. DeSoto County—Dr. A. L. Emerson, Hernando; Forrest County—Dr. W. D. Beacham, Hattiesburg. Franklin County—Dr. J. C. McGehee, Bude. George County—Dr. R. F. Ratliff, Lucedale. Greene County—Dr. M. M. Magee, Avera. Grenada County—Dr. T. J. Brown, Grenada. Hancock County—Dr. C. M. Shipp, Bay St. Louis. Harrison County—Dr. D. J. Williams, Gulfport. Hinds County—Dr. W. E. Noblin, Jackson. Holmes County—Dr. T. P. Haney, Lexington; Humphreys County—Dr. Paul S. Carley, Belzoni. Issaquena County—Dr. A. K. Barrier, Rolling Fork. Itawamba County—Dr. N. W. Nanney, Fulton. Jackson County—Dr. R. G. Lander, Pascagoula. Jasper County—Dr. C. E. Burnham, Bay Springs. Jefferson County—Dr. W. H. H. Lewis, Fayette. Jeff Davis County—Dr. G. C. Terrell, Prentiss. Jones County—Dr. Hardie R. Hayes, Laurel. Kemper County—Dr. C. T. Bell, DeKalb. Lafayette County—Dr. E. S. Bramlette, Oxford. Lamar County—Dr. W. H. Cleveland, Purvis. Lauderdale County—Dr. J. T. Googe, Meridian; Lawrence County—Dr. B. S. Waller, Silver Creek. Leake County—Dr. I. A. Chadwick, Carthage. Lee County—Dr. C. St. C. Guild, Tupelo. Leflore County—Dr. C. P. Coogle, Greenwood. Lincoln County—Dr. W. R. May, Brookhaven. Lowndes County—Dr. J. W. Cox, Columbus. Madison County—Dr. R. W. Smith, Canton. Marion County—Dr. D. A. Ratliff, Columbia. Marshall County—Dr. Ira B. Seale, Holly Springs. Monroe County—Dr. Chas. H. Love, Aberdeen. Montgomery County—Dr. J. P. Synott, Winona. Newton County—Dr. W. G. Gill (to serve until successor is chosen), Newton. Neshoba County—Dr. W. J. Stribling, Philadelphia. Noxubee County—Dr. E. M. Murphy, Macon. Oktibbeha County—Dr. F. B. Long, Starkville. Panola County—Dr. G. H. Wood, Batesville. Pearl River County—Dr. J. W. Shackelford, Poplarville. Perry County—Dr. B. T. Robinson, New Augusta. Pike County—Dr. W. S. Lampton, Magnolia. Pontotoc County—Dr. R. P. Donaldson, Pontotoc. Prentiss County—Dr. W. H. Anderson, Boonville. Quitman County—Dr. A. C. Covington, Marks. Rankin County—Dr. J. B. Ainsworth, Florence. Scott County—Dr. W. C. Anderson, Forest. Sharkey County—Dr. A. K. Barrier, Rolling Fork. Simp-

son County—Dr. R. E. Giles, Mendenhall. Smith County—Dr. J. O. Cargile (to serve until successor is chosen), Taylorsville. Stone County—Dr. S. C. Culpepper, Wiggins. Sunflower County—Dr. J. H. Janney, Indianola. Tallachatchie County—Dr. R. D. Byars, Cascilla. Tate County—Dr. J. S. Eason, Coldwater. Tippah County—Dr. C. M. Murry, Ripley. Tishomingo County—Dr. J. W. Barkley, Iuka. Tunica County—Dr. W. H. Williams, Tunica. Union County—Dr. L. A. Barnett, New Albany. Walthall County—Dr. B. L. Crawford, Tylertown. Warren County—Dr. F. Michael Smith, Vicksburg. Washington County—Dr. H. P. Rankin, Greenville. Wayne County—Dr. J. N. Mason, Clara. Webster County—Dr. W. H. Curry, Europa. Wilkinson County—Dr. C. E. Catchings, Woodville. Winston County—Dr. E. L. Richardson, Louisville. Yalobusha County—Dr. R. J. Criss, Coffeetown. Yazoo County—Dr. H. L. McCalip, Yazoo City.

Dr. M. J. Few of Rolling Fork is in New York for special work.

Dr. L. E. Martin, Anguilla, has recently installed an infra-ray and radiolight lamp in his office.

The Sharkey and Issaquena Counties Tonsil and Adenoid Clinic opened July 1. This Clinic is held one day each week during the summer at the hospital of Dr. W. C. Pool, with Dr. A. K. Barrier, County Health Officer, and two County Health Nurses assisting.

At the July meeting of the Staff of the Vicksburg Sanitarium, the following special case reports were presented:

Partial Bile-Duct Obstruction, with Cardiac Symptoms—Dr. A. Street.

Stricture of the Ureter—Dr. J. A. K. Birchett, Jr.

Ileo-Colitis in a Child of Fourteen Months; Intra-peritoneal Blood Transfusion.

Selected radiographic studies were presented and discussed as follows: Arthritis of the Spine; Enlarged Thymus (three cases); Tuberculosis (two cases); Lung Abscess; Duodenal Ulcer (two cases).

Resolutions were adopted thanking and commending Dr. F. M. Smith, Director of the Warren County Health Department, for the very excellent course of instruction in Communicable Diseases and Public Health given to the nurses and technicians of the Sanitarium in conjunction with the nurses of other Vicksburg hospitals during the past year.

At the meeting of the Staff of the Vicksburg Hospital on June 6, the following interesting discussions of the work of the hospital were presented:

Dr. E. H. Jones:

Traumatic Injury of the Eye.

Acute Mastoiditis with Profound Toxemia, occurring in a young child.

An Individual Presenting a Marked Hypertension (systolic blood pressure 240, diastolic 175), with Infection of Tonsils and Tonsillectomy.

Dr. I. C. Knox:

A Case of Carcinoma of the Cervix, Showing the Effect of Radiation.

A very aged individual with Appendicitis and Diffuse Peritonitis, with recovery following Appendectomy and Drainage.

Dr. W. H. Parsons:

Benign Tumor of the Fibula with Attachment to the Tibia.

A case of Carcinoma of the Pylorus with Associated Acute Cholecystitis.

Dr. G. P. Sanderson:

X-Ray Studies of Vesical Calculus; Hypertrophic congenital pyloric stenosis; Lobar pneumonia; Pulmonary tuberculosis; Periostitis of the humerus; Mastoiditis, with radical operation.

Following the meeting, lunch was served.

SOME HIGH LIGHTS IN MISSISSIPPI MEDICAL HISTORY.*

According to Dr. J. M. Taylor, President of the Mississippi State Medical Association in 1873-4, and published in the 1893 *Transactions*, the first meeting of the Association was held in Jackson, December 15, 1856. It was organized by electing Dr. W. Y. Gadberry, of Benton, president, and Dr. M. C. Craft, of Jackson, recording secretary. Present at this meeting besides Drs. Gadberry and Craft, were Drs. S. C. Farrar and A. B. Cabaniss, of Jackson; H. Posey, of Brandon, and C. B. Galloway, of Kosciusko. There were perhaps others whose names do not appear in the proceedings.

A constitution and by-laws were adopted and delegates appointed to the American Medical Association. On motion of Dr. Craft, those physicians who signed the call for this convention were declared permanent members on compliance with the constitution and by-laws.

*Facts gathered from a History of the Mississippi State Medical Association, prepared by Dr. E. F. Howard, of Vicksburg, with the assistance of Drs. J. C. Hall, of Anguilla, and H. L. Sutherland, of Rosedale, and published by order of the Association in 1910.

The Association adjourned to meet on the second Monday in November, 1857, but there was no other meeting until April 20, 1869, when pursuant to a call made by the Vicksburg Medical Society, physicians from various parts of the State assembled in Jackson for the purpose of again forming a State Medical Association.

A new, three-story brick building with basement is being erected as an addition to the Vicksburg Infirmary. When completed, the institution will be equipped to care for 100 patients, according to the most approved modern standards. Dr. B. B. Martin is superintendent and owner.

On June 6 the staff of the new Vicksburg Hospital was organized as follows: President, Dr. I. C. Knox; Vice-President, Dr. G. P. Sanderson; Secretary, Dr. W. H. Parsons; members, Drs. J. S. Ewing, E. H. Jones, E. F. Howard, M. H. Bell, and C. J. Edwards, all of Vicksburg.

It was voted to hold regular staff meetings at 7:30 P. M. on the first Tuesday of each month.

Several physicians have located in Jackson during the past few months. They include Dr. W. L. Hughes, Jackson Infirmary, Eye, Ear, Nose and Throat; Dr. T. J. Crofford, Lampton Building, Internal Medicine and Diagnosis; Dr. T. A. Wilde, Century Building, Eye and Plastic Surgery of the Face; Dr. T. E. Wilson, Lamar Life Building, General Practice and Laboratory; Dr. O. Simmons, Century Building, General Practice.

The many friends of Dr. F. J. Underwood, Executive Officer of the Mississippi State Board of Health, will regret to learn that he is confined to his home with undulant fever.

The City of Jackson is mourning the death of Dr. William S. Hamilton, and Dr. E. L. Posey, two of its best beloved physicians and citizens. The profession nowhere can boast of two finer young men or more capable physicians.

A number of improvements have recently been made at the Matty Hersee Hospital, Meridian, at a cost of \$30,000. Included are new quarters for the nurses, a recreation hall for nurses, new furniture and general hospital equipment.

Dr. F. J. Martin, Tulane University, has recently been appointed house physician to take the place of Dr. G. L. Arrington, resigned.

Dr. Leslie V. Rush has resigned as a member of the visiting staff in orthopedic surgery.

Drs. C. J. Lewis and G. L. Arrington have been appointed members of the visiting staff.

Dr. W. W. Hall, Tulane University, is now an interne.

About sixty doctors attended the meeting of the Central Medical Society on July 9. Dr. J. W. Barksdale presented an interesting paper on "Surgical Condition of the Biliary Tract," and Dr. R. W. Hall a valuable paper on "Epidermophytosis." Dr. H. A. Gamble, president of the Mississippi State Medical Association, who was to have given an address at this meeting, was prevented from attending. After a short business session, the meeting was closed with a banquet. This meeting of the Society, which was held at the University Club, will be the last until September.

Dr. H. R. Shands, of Jackson, is spending the summer at Colorado Springs. Dr. Frank Hagaman, his associate, will carry on while Dr. Shands is away.

The June meeting of the Central Medical Society was held at the Jackson Chamber of Commerce on June 18. Following a clinic by members of the society, the following program was presented:

Plastic Surgery of the Face (illustrated by lantern slides), Dr. T. A. Wilde.

The State Insane Hospital, Dr. C. D. Mitchell.

The Toxic Psychoses, with Report of Cases, Dr. R. B. Zeller.

Psychoneurosis Following Removal of the Ovaries, with Report of Cases, Dr. E. J. Banks.

The Importance of the Early Diagnosis and Treatment of Pellagra, Dr. A. L. Monroe.

The regularly quarterly meeting of the Northeast Mississippi Medical Society was held at Walker's Lake, West Point, on the afternoon of June 18. A barbecue was furnished by the West Point physicians, after which the scientific program was carried out as follows:

Meeting called to order, President J. R. Hill.

Invocation, Rev. L. E. Sellers.

Address of welcome, Hon. T. J. Tubb.

Response, Dr. G. S. Bryan.

Report of Two Interesting Cases of Tubal Pregnancy, Dr. F. B. Long, Starkville. Discussion opened by Drs. Ivy and Sutherland.

Cesarian Section, Dr. V. D. Philpot, Houston. Discussion opened by Drs. Fite and R. E. Priest.

Chronic Pyelonephritis, Dr. O. S. McCown, Memphis, Tenn. Discussion opened by Drs. Deans and R. M. Boyd.

Report of Interesting Cases, Dr. W. W. Bryan, Hamilton. Discussion opened by Dr. M. Q. Ewing.

Co-operation Between the General Practitioner and the Health Officer, Dr. C. H. Love, Aberdeen. Discussion opened by Drs. G. S. Bryan and Guild.

Biloxi dedicated a new hospital on July 3. Speakers at the impressive ceremonies were Mayor John J. Kennedy, Louis Staehling, president of the Biloxi Hospital Board; James C. Carigan, potentate of Alchymia Shrine of Memphis; L. W. Guice, city attorney, and Dr. G. F. Carroll, president of the Chamber of Commerce. Rev. E. A. DeMille said the invocation. The drill team of Alchymia Temple gave an exhibition and the Alchymia Shrine band furnished music for the occasion. The hospital has 60 beds and it is intended to make it a Grade A institution.

Dr. T. H. D. Griffiths, until recently connected with the Survey of Salt Marsh Areas under the United States Public Health Service, with headquarters at Biloxi, has been transferred. Dr. Griffiths made many friends along the Gulf Coast who regret his leaving.

Dr. F. Michael Smith, Director of the Warren County Health Department, has during the past year given a comprehensive course in Communicable Diseases and Public Health to the pupil nurses and technicians of the hospitals of Vicksburg. The course has consisted of one lecture a week with frequent quizzes and examinations. At this time when preventive medicine is so much to the fore, it is felt that this work is an advance in the training of nurses and technicians, and could well be carried out by health officers in every county of the State where there are nurses' training schools.

Announcements have been received of the approaching marriage of Dr. Preston Street Herring and Miss Helen Greenoe, both of Vicksburg. Miss Greenoe is the daughter of Rev. and Mrs. John C. Greenoe. Dr. Herring is house officer at the Vicksburg Infirmary. The marriage will take place August 1 at the First Baptist Church, Vicksburg, Rev. J. C. Greenoe officiating.

Dr. and Mrs. Philip Beekman, of Natchez, are spending the summer at Atlantic City.

Dr. E. E. Benoist, of Natchez, has been elected secretary of the Lake St. John Outboard Motor Boat Association.

Dr. Carl Day, of Yazoo City, has recently returned from New York where he spent six weeks in x-ray work.

Dr. J. T. Rainer, of Yazoo City, recently visited the Mayo Clinic at Rochester, Minn.

Dr. Gilruth Darrington, of Yazoo City, has been in New Orleans for special study.

Dr. J. D. Roberts, of Yazoo City, who was graduated from Tulane University this year, has returned to New Orleans for a year at the Charity Hospital.

Dr. George M. Street, of Vicksburg, attended the annual meeting of the American Medical Association at Portland, Oregon. He was accompanied by his wife and two children.

Dr. W. A. McMahon, and family, of Union, enjoyed a vacation during the month of July in Texas.

The last bi-monthly meeting of the East Mississippi Medical Society was held at the Elks Club, Meridian, on the afternoon of June 20th. The program was as follows:

Artificial Joint of Forearm, with Discussion of Compound Fractures (Clinic), Dr. S. A. Majure, Hickory.

Important Points in the Early Diagnosis of Exophthalmic Goitre, Dr. W. C. Chaney, Memphis, Tenn.

Some Points on Diagnosis and Treatment of Hear Disease, Dr. J. M. Bamber, New Orleans, La.

Intravenous Use of Magnesium Sulphate in Eclampsia, Dr. W. R. Holliday, Meridian.

Tularemia, Dr. J. L. Parkes, Union.

The scientific program was followed by a banquet at the Great Southern Hotel.

The East Mississippi Medical Society, which is composed of the physicians of Newton, Neshoba, Winston and Lauderdale counties, has as its president Dr. T. E. Jarvis, of Newton, and as its secretary, Dr. J. E. Anderson, of Louisville.

It is with much regret that announcement is made of the death of Dr. Robert McLain Hand at his home in Shubuta on June 11. Dr. Hand, a graduate of Louisville Medical College in the Class of 1874 had practiced medicine for 53 years. He will be much missed by his many friends and colleagues.

The following letter from Dr. I. W. Cooper, of Meridian, Treasurer of the Mississippi State Medical Association, written to the associate editor in reply to a request for news, gives numerous interesting facts about the physicians and medical happenings in eastern Mississippi. It is, however, a source of regret that Dr. Cooper takes such a pessimistic view of the future.

"Yours of yesterday at hand and in reply will say that I know another month has gone and both of us are one month nearer the grave, and I certainly hope you will be successful in making

Mississippi News an outstanding feature of the Journal.

"For your information:

"Dr. Leslie V. Rush has just returned from New York where he spent about a month trying to learn something about orthopedics.

"Dr. S. H. Hairston visited the Northeast Mississippi Medical Society at West Point.

"Dr. Franklin Gale Riley has just returned from a four weeks' tour of the northwest and is very much improved in health and spirit.

"Dr. George W. Bounds has returned from a two weeks' vacation spent in Tennessee.

"Dr. Leonard Hart left the first of July for an extended vacation of about two months.

"A handsome son has just been born to Dr. and Mrs. W. R. Holliday of this city, and I might add that this is the only birth in the families of the doctors in this city which has occurred in a long time. Most of the doctors are now going down the shady side of the street, and about all they can do is nurse and play with their grandchildren.

"If I can think of anything else between now and July 10th, I will write you, but I want to assure you of one thing—I don't think I can notify you of any more births. The next meeting of our Four County Society will be held at Philadelphia, August 15."

Dr. S. J. Gaddy, Eye, Ear, Nose and Throat; Dr. Earl J. Polk, Dentist; Dr. R. E. Schwartz, Heart, Lung and Stomach; and Dr. P. E. Smith, Gynecology and Surgery, all of Hattiesburg, have organized a clinic and are now settled in their new building on Hardy street.

Dr. C. C. Hightower, of Hattiesburg, furnishes the following interesting items:

"The South Mississippi Medical Society is one of the best in the State, covering fourteen counties in South Mississippi. We have a membership of about 125 with an average attendance of about 40. We meet quarterly, alternating meetings between Hattiesburg and Laurel, the two most prosperous cities in South Mississippi. The Society was organized about ten years ago and has failed to hold its regular meeting only one time. The meetings are held in the afternoon and evening, with a dinner served between the two sessions.

"Dr. J. P. Culpepper, Jr., of Hattiesburg, took on a regular boss, Miss Mildred Fairley, July 10.

"There is a great race on between Dr. Joe Green, of Richton, and Dr. H. L. McKinnon, of Hattiesburg, in story telling. Joe has a little edge on Dr. McKinnon in story telling, but Dr. Kinnon is leading his otherwise.

"Dr. C. C. Buchanan, of Hattiesburg, is anxious to attend the next year's meeting of the State

Medical Association. He wants to be captain of the ship again.

"The Laurel doctors have been outclassed by the Hattiesburg doctors in attendance records during the past few meetings. It seems that they have conceded the honors and have almost quit trying."

Dr. Felix J. Underwood, Executive Officer of the Mississippi State Board of Health, has announced:

The following men who took medical examinations on four years' work, at the annual meeting of the examining board at Jackson on June 25 and 26, were granted licenses to practice medicine in Mississippi by the State Board of Health:

Drs. Thomas E. Wilson, James L. Hasic, Paul B. Brumby, Jewel D. Turner, Clyde R. Bennett, Jack Lazarus, Irvin B. Trapp, Alfred G. Neill, Davidson B. Baugh.

The following men who took examinations on the last two years' medical work, having successfully passed examinations on the first two years' work in 1927, were granted licenses to practice medicine in Mississippi by the Board at its final meeting, June 26:

Drs. George Evans Riley, James W. Lipscomb, Jr., Joseph D. Roberts, Jr., Tempel M. Moore, James P. Ward, William E. Anderson, Henry B. Goodman, Harvey F. Garrison, Jr., Thomas B. Butler, George H. Butler, Walter M. Coursey, Farris James Martin, Paul Jackson, James D. Biles, James A. McCallum, Stirling S. McNair, Marion B. Ware, Nathan B. Lewis.

The following men were granted license to practice medicine by reciprocity with the States indicated:

Drs. Will Wright Strange (Tennessee), Oma Simmons (Tennessee), Boyd C. Barentine (South Carolina), Coleman C. Burns (Arkansas), T. H. D. Griffiths (Tennessee), Preston S. Herring (Louisiana), Johnny Rufus Johnson (Tennessee), Robert T. McLaurin (Virginia), Lawrence W. Long (Tennessee), George P. Sims (Nebraska), Samuel W. Colquitt (Arkansas), James J. Drace (Missouri), James Cary Pegues (Georgia), Lawrence F. Brooks (col.) (Missouri), Jonathan H. Rucker (col.) (Tennessee).

Two osteopaths came before the Board for examinations in anatomy, physiology, and hygiene, the three subjects the law requires that they pass before practicing osteopathy. Both applicants were successful. They were Drs. William G. Waters, Blue Springs, and Allison B. White, Kansas City, Mo.

The following passed examinations on the first two years' medical work:

Jewell R. Wilson, Stanley A. Hill, James R. Brown, Eugene A. Bush, F. J. Wedell, Jr., Boyd C. Edwards, Tandy C. Rice, Glenn T. Gallaspy, Robert E. Shands, James E. Wilson, John H. Arrington, Jr., William R. McGehee, Wiley D. Lewis, Loys W. Willey, James G. Thompson, William E. Akin, Theodore H. Rayburn, Cecil P. Herrington, Walter E. Johnston, William Earl Hutto, Frank A. Latham, George L. Biles, John E. Tate, William Thomas Harper; Ira P. Burlingame, Jr., Charles F. Henley.

Dr. Underwood made the following statement in regard to this year's meeting of the Board:

"Examinations of applicants for the practice of medicine and osteopathy are conducted during the month of June of each year. As a whole, the group which came for examination this year was the best group that has appeared before the Board of Health for examination.

"The medical schools of the country are making definite improvement in their methods from year to year and it is a source of great satisfaction that within very recent years at least some attention is being paid to the teaching of preventive medicine. Two or three medical schools are doing outstanding work in this field at the present time. Vanderbilt University Medical School is a notable example. Tulane and the University of Tennessee are also doing well. The University of Virginia is making rapid strides in teaching preventive medicine.

"Nothing has been sacrificed by these great schools in the teaching of curative medicine and surgery, but the students are given the advantage of a good course in preventive medicine which is very essential for successful, well-rounded practice in any community at the present time. In the future, every physician will be called upon to do an increasing amount of preventive medicine as a part of his daily routine due to the educational program of the Health Departments of the various States and to the splendid efforts of the United States Public Health Service and the Rockefeller Foundation."

At the meeting of the Issaquena-Sharkey-Warren Counties Medical Society held at the Y. M. C. A., Vicksburg, on July 9, the following scientific papers were presented:

Acute Sinusitis, Dr. E. F. Howard. Discussed by Drs. A. K. Barrier, S. W. Johnston, and A. Street.

Some Interesting Bone Tumors, Dr. A. Street. Discussed by Dr. E. F. Howard.

In preparation for the annual meeting of the Mississippi State Medical Association to be held in Vicksburg in 1930, President W. C. Pool appointed the following committees:

General Chairman, Dr. S. W. Johnston, Vicksburg.

Clinics—Drs. L. J. Clark, Vicksburg; W. H. Parsons, Vicksburg; P. S. Herring, Vicksburg; V. Bonelli, Vicksburg; T. W. Huey, Grace.

Commercial Exhibit—Drs. S. Myers, Vicksburg; D. A. Pettit, Vicksburg; H. W. Weimar, Vicksburg.

Scientific Exhibits—Drs. E. F. Howard, Vicksburg; F. M. Smith, Vicksburg; M. J. Few, Rolling Fork; L. S. Lippincott, Vicksburg.

Convention Halls—Drs. G. P. Sanderson, Vicksburg; M. H. Bell, Vicksburg; J. B. Benton, Valley Park; W. H. Cooper, Catchings.

Hotels and Rooms—J. A. K. Birchett, Vicksburg; H. S. Goodman, Cary; W. C. Seale, Catchings.

Registration—Dr. J. A. K. Birchett, Jr., Vicksburg; C. J. Edwards, Vicksburg; J. V. May, Port Gibson.

Reception and Welcome—Drs. H. H. Johnston, Vicksburg; W. M. Eggleston, Vicksburg; J. S. Ewing, Vicksburg; H. H. Haralson, Vicksburg; L. E. Martin, Anguilla; B. T. Orendorf, Rolling Fork; D. P. Street, Vicksburg; A. K. Barrier, Rolling Fork.

Finance—Drs. I. C. Knox, Vicksburg; B. B. Martin, Vicksburg; A. Street, Vicksburg; W. G. Kiger, Eagle Bend; W. C. Pool, Cary; W. H. Scudder, Mayersville.

Entertainment—Drs. E. H. Jones, Vicksburg; G. M. Street, Vicksburg; G. W. Gaines, Tallulah; E. B. Stribling, Rolling Fork; C. S. Hyland, Yokena.

The DeSoto County Medical Society held its regular meeting Monday, July 8. The topic under general discussion was pellagra.

Dr. Charles Whitley Emerson was enrolled as a member of the Society. Dr. Emerson is now located in his home town, Hernando, and is associated with his father, Dr. Angus L. Emerson. The young doctor is a 1926 graduate of the University of Tennessee and has served two years as an interne in the Baptist Memorial Hospital of Memphis, Tennessee.

Dr. Alex J. Weissinger, of Hernando, who has been ill for a month, has resumed his practice.

The program of the DeSoto County Medical Society for its September meeting will be devoted in part to

"Obstetrics in 1869"—Dr. W. S. Weissinger.

"Obstetrics in 1929"—Dr. T. W. Emerson.

The DeSoto County Medical Society now has a membership of fourteen. Dr. J. M. Wright of Hernando is President and Dr. L. L. Minor of Memphis is Secretary.

BOOK REVIEWS

Animal Parasitology: With Special Reference to Man and Domestic Animals: Robert Hegner, Francis M. Root and Donald L. Augustine. New York. Century Co. pp. 731.

This second number in The Century Biological Series is a university textbook on parasitology, written by men well qualified to present the subject. In addition to a General Introduction on parasitism in animals (pp. 3-24) by the senior author there are three sections, unfortunately divided into water-tight compartments.

The first section, that of Protozoology (pp. 25-185) by Professor Hegner is a masterly presentation of this important division of the subject. This section is well written, has a good balance and contains all of the information necessary for an academic knowledge of the protozoan parasites of man and laboratory mammals. It is adequately illustrated although some of the figures are too black for a pleasing appearance. The bibliography on this section is excellent.

The section on Helminthology (pp. 189-460) is contributed by Professor Augustine. It contains information dealing with the helminth fauna of man and domestic animals. The classification is that which has been in vogue for the past quarter of a century and many of the illustrations are stereotyped and should have been supplanted by new ones. While most of the important species have received adequate treatment, the blood-flukes (schistosomes) have received too brief consideration, in spite of the fact that they constitute one of the four or five groups really causing serious disease in man. The chapter on hookworms and related forms is perhaps the best presentation in this section.

The section on Medical Entomology (pp. 463-640) by Professor Root constitutes a real contribution to the subject. Not only is it authoritative and up-to-date, but it is the first scholarly presentation of medical entomology in the English language since the publication of Colonel Alcock's "Entomology for Medical Officers". This section is clear, concise, and well-developed. Without exception the illustrations are excellent. Most of them are original. Necessarily there are several technical keys, but there are also chapters dealing with such public health subjects as "Malaria and Mosquito Surveys", "Malaria Control", "Culicine Mosquitoes and Human Disease", "Domestic Flies as Disease Carriers and their Control", and "Notes on Collecting and Preserving Insects of Medical Interest". This section alone is worth the price of the book.

The book is well printed although not substantially bound.

ERNEST CARROLL FAUST, Ph.D.

Anatomical Studies on the Motion of the Heart and Blood: By William Harvey, M. D.; English translation by Chauncey D. Leake. Springfield, Ill. Charles C. Thomas. 1928. pp. 154.

The 16th century was concerned primarily with the structure of organs and was a period of turmoil in medicine from which the anatomy of Vesalius emerged. The main contribution of the 17th century was Harvey's demonstration of the manner in which the heart maintains the nutrition of the body. The facts given by Harvey have not had to undergo any appreciable modification during the three centuries which have elapsed since the publication of his work in 1628 and they have furnished the groundwork or starting point for subsequent researches.

Harvey's *De Motu Cordis* has been described by Yandell Henderson as "the most delightfully readable of scientific works". "Every student of the biological and medical sciences should own and read it." This volume is one of the tributes of the Harvey tercentenary, beautiful as well as practical. It is in two parts. Part I is a facsimile of the original Latin edition, *Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus*. Part II is the Leake translation. This is the third attempt to render Harvey's classic into English idiom. The first was apparently an anonymous effort, prefaced by a Zachariah Wood of Rotterdam, and printed by Francis Leach for Richard Lowndes of London, in 1653. This *actavo* was reprinted in 1673. The second was the well known translation made for the Sydenham Society by Robert Willis and published in 1847. Reprinted in London in 1889, in Canterbury in 1894, and in Everyman's Library in 1907, this has become the standard English version. Although an excellent translation, its stilted and involved phraseology makes it rather difficult reading for those more accustomed to present diction. Professor Leake's experience with medical students and physicians makes him feel confident that they would welcome the chance to study the works of the great contributors to their profession were these to be offered to them in an attractive and easily readable form. This led to the suggestion that in the bringing out of a tercentennial edition of Harvey's book a new translation in the language and spirit of our times be attempted. According to the translator, "In his more scientific passages, Harvey is remarkably terse and snappy, in the current style. In his philosophical discussions he becomes vague and his sentences grow beyond control, but whose do not?" The translation is admittedly free, in the deliberate attempt to present Harvey's thought in the current physiological

manner. Every one will find the translator's analyses of the argument, of the differences in Harvey's style as he grew older, of the contents of the various chapters, and of Harvey's occasional lack of logic and lapse into the use of the traditional authority of Galen as evidence, very helpful and illuminating.

Harvey was among the first to use the practical methods of science as we do now: observation, hypothesis, deduction and experiment. In order to bring out the significance of Harvey's work in regard to our modern knowledge of cardiac function, and to relate it to the slow development of this knowledge, footnotes have been added to the translation. They are appropriate and will appeal to all. A chronology of Harvey's life closes the work.

The work is beautifully printed and attractively bound. Translator and publisher deserve the highest praise for offering in a dignified and inexpensive way an opportunity to become acquainted intellectually with one of the greatest contributors to medical science.

HENRY LAURENS, Ph.D.

Blood and Urine Chemistry: By R. B. H. Gradwohl, M. D., and Ida E. Gradwohl, A. B. St. Louis, Mo. C. V. Mosby Company, 1928. pp. 542.

This book contains a great amount of information for one interested in the examination of blood and urine. For those who desire to equip a laboratory there is a description of the facilities required and a statement of the apparatus necessary. A variety of colorimeters are described and their use discussed. The significance of Ph and the nature of buffer action are explained. Methods for the determination or identification of the more commonly studied normal or abnormal constituents of blood and urine are presented, alternate procedures being given in a number of instances. A chapter is devoted to the microscopic examination of urinary sediments and another to the bacteriologic examination of urine. A large portion of the book is concerned with the interpretation of blood chemical findings with particular regard to blood sugar, acidosis, gout and nephritis. The final section takes up the theory, clinical application and methods of determination of basal metabolism. References to the original literature are liberally employed throughout the text.

R. C. CORLEY, Ph.D.

Transactions of the Seventh Congress, Far Eastern Association of Tropical Medicine, held in British India December, 1927. Edited by Lieut.-Col. J. Cunningham. Calcutta. Thacker's Press and Directories, Ltd., Vol. I, 1929. pp. 865.

This volume (the first one of three in the series of this Congress) consists of 865 pages of the papers and discussions of the sections of clinical medicine, pathology, hygiene and state medicine of this important congress on medicine in the tropics. The volume is prefaced by a list of the patrons and officers of the congress, the opening addresses of welcome and the presidential salutory. There is then presented a splendid compilation of essays in the following order: medicine and dermatology (pp. 1-137), pathology (pp. 138-194), surgery (pp. 195-266), ophthalmology ((pp. 267-317), gynecology and diseases of pregnancy (pp. 318-388), mental hygiene and psychiatry (pp. 389-428), radiology (pp. 429-446), dentistry (pp. 447-462), state medicine: general and special hygiene (pp. 463-816), and maternity and child welfare (pp. 817-862). It must be stated that in this series of valuable papers there is no single one which stands out as a preeminently important contribution to medical literature. However, two facts have impressed the reviewer (who, as a member of the Association, is familiar with the progress of medicine in the Far East). The first is the very large proportion of papers which are the contributions of native physicians of British India, to be exact, thirty per cent of the total. The second striking fact is the progress made in public health and sanitation in India, as demonstrated both by the type of papers presented and by the statistical information contained in them. One is struck by the lack of emphasis on beriberi, which has been the most important public health problem presented in the previous congresses of the Association, and by the multiplicity of topics on public health, including quarantine, anti-plague measures, anti-cholera vaccination, epidemiology of cerebro-spinal meningitis, sterilization of drinking water, sewage disposal, tuberculosis, school hygiene, and health campaigns among the lower classes. As a clearing house for all of these activities the congress needs no apology.

The volume is well edited and beautifully printed, with clean-cut half-tone illustrations and a few excellent colored plates.

ERNEST CARROLL FAUST, Ph.D.

The Facts of Modern Medicine: A Simplified Statement of Established Knowledge on Medical Subjects, with Reference also to Certain Current Misconceptions: By Francis W. Palfrey, M. D. New York and London, D. Appleton & Company, 1929. pp. 490.

An excellent book directed to an excellent purpose and worthy of heartiest commendation. The question, however, is how to get it into the hands of those for whom it is intended and who should read it. "The purpose of this book is to promote among the laity a better understanding of medicine. It is a constant source of astonishment to physicians to find that patients, otherwise well informed, understand practically nothing about health and disease." It is indeed a curious commentary upon modern education and modern civilization that the average well educated person knows more about the intricacies of the construction and function of the automobile and radio than he does about the fundamental facts of his own body. This gives rise not only to neglect of the individual's body and of the public health but also to the encouragement of all sorts of crazy cults. If by the reading of such books as these and by popular public lectures the knowledge of the essentials of health and disease could be spread, a great step forward would be taken. The difficulty lies in getting the average layman to read such books or attend such lectures. Half-hearted attempts have been made in this direction from time to time and half-baked elementary courses in human physiology have been offered to high school students.

The present book is most readable and is couched in dignity though proper and thoroughly understandable terms. The first part leaves little room for criticism. The second part is devoted to individual diseases and suggests again another of the difficulties in this propaganda, namely the fact that a little knowledge is a dangerous thing. As the author points out in his introduction, there have been books published "purporting to be 'family medical advisers'. . . . Most, if not all, of them are dangerous, not only by reason of the general attitude which they encourage, but because of the specific advice contained in them is frequently erroneous." Both of these dangers, of course, the author has avoided.

A second purpose of the book is interesting. It is suggested that "if a medical student at the beginning of his career were given a preliminary view of the whole subject, drawn in broad outline but with all of its parts in true perspective, many of his difficulties and much of his blind floundering would be avoided. This book gives the student a bird's eye view of the territory he is to cover and he can then begin to appreciate the significance of the early fundamental courses and

the practical bearing of the preliminary facts which must be drilled into him. It has been suggested from time to time that a few lectures be given in the first or second year of the medical curriculum which would serve this purpose and give the proper correlation between the pre-clinical and clinical courses. Whether these lectures be given or not, Dr. Palfrey's book can be recommended unreservedly to the medical Freshman as a reliable and stimulating guide and as furnishing an adequate plan of the structure which he is to rear.

I. I. LEMANN, M. D.

William Harvey: By Archibald Malloch, M. D., M. R. C. P. (Lond.) New York, Paul B. Hoeber, 1929. pp. 97.

This little volume is one of a series in which are included such names as Sydenham, Kussmaul, and Laennec. Harvey's life and habits are briefly and well described, and the manner in which his theory of the circulation was evolved is outlined in a most interesting manner. Two hours enjoyable and well spent.

M. M. WINTROBE, M. D.

PUBLICATIONS RECEIVED

A. Appleton and Company, New York and London: *Bodily Changes in Pain, Hunger Fear and Rage*, by Walter B. Cannon, M. D., S. D., LL.D.

P. Blakiston's Son & Co., Philadelphia: *Gynecology*, by Lynn Lyle Fulkerson, A. B., M. D., F. A. C. S. *Hygiene and Public Health*, by Parks and Kenwood, revised by Henry R. Kenwood, C. M. G., M. B. and Harold Kerr, O. B. E.

F. A. Davis Company, Philadelphia: *Conquest of Cancer by Radium and other Methods*, by Daniel Thomas Quigley, M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York: *History of Hemostasis*, by Samuel Clark Harvey, M. D. *Otosclerosis*, a resume of the literature to July, 1928, compiled under the direction of the Committee on Otosclerosis, American Otological Society. *Introduction to the Study of Physic*, by William Heberden.

Lea and Febiger, Philadelphia: *Human Helminthology*, by Ernest Carroll Faust, Ph.D.

The Macmillan Co., New York: *Clinical Aspects of Venous Pressure*, by J. A. E. Eyster, B.Sc., M. D.

C. V. Mosby Company, St. Louis: *Principles and practice of Electrocardiography*, by Carl J. Wiggers, M. D. *Clinical Laboratory Methods*. 3d. ed., by Russell Landram Haden, M. A., M. D. *Osteomyelitis and Compound Fractures*, by H. Winnett Orr, M. D. F. A. C. S.

W. B. Saunders Company, Philadelphia and London: *Collected Papers of the Mayo Clinic and Mayo Foundation*, ed. by Mrs. M. H. Mellish.

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VOLKMAN'S ISCHAEMIC CONTRACTURE.*

FRANK D. DICKSON, M. D.,
KANSAS CITY, Mo.

In 1925, I read a paper before the Southern Medical Society entitled "Peripheral Nerve Injury Associated with Fracture of the Long Bones." At that time, the view was expressed that when evidence of definite nerve injury following trauma, whether accompanied by fracture or not, persisted for longer than six weeks, the nerve should be explored. This conclusion was based on our experience in thirty-one cases operated upon which clearly showed: First, that the results obtained by operations upon injured nerves were in direct proportion to the shortness of time elapsed between the onset of the nerve injury and operation; second, that after the lapse of a year and a half or two years, little could be expected in the way of nerve regeneration following operation. Since that time we have seen no reason to change this opinion but rather we have become more convinced that it is correct. It is my intention in this presentation to discuss a particular type of nerve injury associated with fracture—namely, Volkmann's ischaemic contracture, from this point of view.

Since Volkmann in 1875 first described the particular form of contracture involving the wrist and fingers which bears his name, a fairly voluminous literature has

appeared. This has dealt chiefly with etiology and pathology; comparatively little has been suggested as to treatment, at least of an encouraging character so far as return of useful function is involved. Most methods of treatment are based upon the correction of deformity and rely upon such correction to restore usefulness to the impaired extremity. Our experience with Volkmann's ischaemic contracture during the past seven years leads us to believe that in many cases something more than correction of deformity is necessary in the way of treatment if the best outcome is to be obtained, and it is this feature of the management of this condition that will be emphasized in what is to follow:

Volkmann's ischaemic contracture results from severe injury to the arm, forearm or elbow, usually a supracondylar fracture of the humerus. It occurs most commonly in children between the ages of six and fourteen years and is rarely encountered in adults. Schultze and Eitel¹ believe that the explanation of its frequent occurrence in children is to be found in the fact that the blood supply to the muscles in children is much less per volume than in adults and that consequently interference with the blood supply to muscles in children causes much more damage than in adults. The actual causative factor which is responsible for the condition is compression of the blood vessels and nerves at the elbow or below, interfering with the circulation on one hand and nerve conductivity on the other.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

The compression which causes the damage is generally admitted to be due to the hemorrhage and inflammatory exudate poured out and retained within the deep fascia. The swelling produced, because of the unyielding character of the fascial envelope, causes tremendous pressure upon the intrafascial structures which suffer damage in proportion to the pressure produced and their vulnerability to this pressure. The blood vessels and nerves are the most vulnerable and so suffer the greatest damage. The part played by tight bandaging in causing pressure upon the vessels and nerves has been much discussed, and while it unquestionably is, from time to time, a factor; in by far the majority of cases it is of much less importance than is generally supposed. The use of the acutely flexed position of the elbow in treating supracondylar fractures of the humerus has been blamed also, but here again it is in only the isolated case that this position can be held responsible. Both tight bandaging and acute flexion of the elbow can and do add to the pressure on the vessels and nerves caused by the swelling within the deep fascia, but in the opinion of most observers the latter is by far the most important, and in the majority of cases, the only damaging agent. This fact is of considerable importance since often unjust criticism has been directed toward a medical attendant because of the widely held view that either tight bandaging or the position in which the elbow was treated is the cause of the contracture. Unfortunately, there is no way in which the amount of compression present within the deep fascia in a given case can be estimated, so it is impossible in most cases to guard against the onset of symptoms except by careful and frequent inspection.

PATHOLOGY.

The pathological changes found in Volkman's ischaemic contracture are very definite and involve the flexor muscles of the forearm and the trunks of the median and ulnar nerves, particular the median.

The pathological changes in the flexor muscles are a more or less widespread necrosis of the muscle fibers and their replacement by dense connective tissue so that the bodies of the muscles contain few contractile fibers, are pale in color, hard and firm in texture and are bound together into a single mass by adhesions. Such changes in the flexor muscles are caused by interference with their blood supply due to compression of the blood vessels. Whether interference with the arterial supply or venous return is responsible for the damage is still a subject of debate. We know that interference with the arterial supply to muscles results in necrosis if the interference lasts for several hours, and necrosis has been demonstrated (Schulze and Eitel) in at least one case of ischaemic contracture examined early and by animal experiments. On the other hand, Brooks has shown that interference with the venous return causes hemorrhage, edema, fibrosis and contractures in muscles, changes which are very characteristic of Volkman's contracture. Cases have been reported in which ischaemic contracture has occurred without any disappearance of the radial pulse which indicates that in these cases at least the arterial circulation was intact. Certainly, the thin walled veins are much less resistant to compression than the thicker walled arteries and should suffer more damage. On the whole, then, the preponderance of evidence seems to point toward venous congestion as the most probable cause of the muscle degeneration present in Volkman's contracture.

The changes found in the nerve trunks are those characteristic of compression. The nerve is small in caliber and hard and firm in consistency; the sheath is thickened and adherent and the fibrillae within the nerve are found surrounded by dense connective tissue. In the cases operated upon the nerve trunks have been found embedded in firm scar tissue which is very difficult to remove. The median nerve in our experience has been the most seriously

involved. This may be due to the fact that the arrangement of the fascial planes about the elbow tend to direct the flow of hemorrhage and exudate toward the ulnar side of the elbow and about the median nerve. The ulnar nerve is at times involved and in two cases operated upon all the nerves, median, ulnar and musculospiral were found completely destroyed. The result of such damage to nerves is interference with their conductivity, the consequence of which is trophic, sensory, motor disturbances and deformity in the forearm and hand.

Extensive investigation and experimental studies have shown that both muscle degeneration and nerve injury are found in Volkman's ischaemic contracture. The consensus of opinion today is that the muscle injury is the more important factor and that the nerve damage is of secondary importance. In certain cases this seems to be unquestionably true but we believe it is not so in all cases. A careful study of Volkman's ischaemic contracture in our clinic has led us to separate our cases into two types. The first type includes these in which there is the usual contracture with loss of function in the forearm, hand and fingers, but with only moderate damage to the flexor muscles as evidenced by examination (Fig. I); the second type is that in



Fig. I. Type one—Volkman's ischaemic paralysis, with only moderate muscle destruction as evidenced by the fullness of the forearm.

which is there is profound damage to the flexor muscles which are reduced to a hard, fibrous, atrophied mass (Fig. II). In the

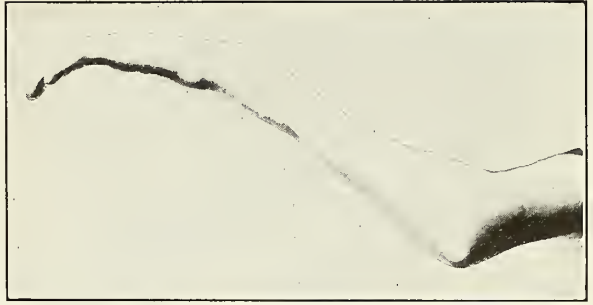


Fig. II. Type two—Volkman's ischaemic paralysis, with marked muscle destruction as indicated by the extreme atrophy of the flexor muscles.

first type we feel that the damage to a nerve or nerves is the primary pathology and that the muscle injury is of secondary importance. In the second type, we believe that whatever the nerve damage has been, that involving the muscles is as great or greater, and that it therefore is the most outstanding factor in causing deformity and interference with function. We have then attempted to classify our cases into these two types: those in which the nerve injury predominates and those in which the muscle damage is the outstanding feature. We believe that this classification has been of material aid in enabling us to formulate a prognosis and outline our treatment. In the first type we feel that the prognosis is good if proper treatment is instituted immediately. In the second type the prognosis is bad so far as return of useful function is to be expected because of the extreme destruction of muscle tissue.

SYMPTOMS.

It seems scarcely necessary to discuss the symptomatology of this condition since the well-developed case is so classical in its manifestations and so familiar to all of you. It is perhaps worth while to briefly review the symptoms which are seen early. In cases which we have investigated the early symptoms seem to appear in fairly definite sequence. First is excessive swelling of the hand and fingers which rapidly become cyanotic. Almost coincident with this is the complaint of excessive pain which persists in its intensity long after the patient should begin to be comfortable. Within twenty-four to forty-eight hours, a flexion

contraction appears in the fingers and thumb, not the easily correctable contractures which often occur, but resistant contractures which are difficult to overcome any attempts to correct which cause intense pain. Numbness, tingling or hyperaesthesia are complained of at about the same time in the fingers. Finally, within a few days trophic ulcers appear in the anticubital fossa or about the wrist. The early appearance of hyperaesthesia in the fingers and the early occurrence of trophic ulcers speak strongly for interference with nerve conductivity. In some cases disappearance of the radial pulse is noted. The presence of all or any of these symptoms is extremely significant, and demand that immediate steps be taken to relieve compression. Probably in no traumatic condition is it as necessary to be constantly on the lookout for both circulatory and nerve interference, as in injuries about the elbow in children, for failure to observe the onset of ischaemia means disaster for the patient and criticism of the medical attendant.

TREATMENT.

In combating this condition it is evident that prevention is the ideal treatment. In a certain percentage of cases this is possible if a diagnosis is made early enough and all bandages are removed and the extremity placed in a position which relieves or decreases pressure. Unfortunately, however, in the majority of cases, such measures do not relieve the pressure within the fascia which is causing most of the damage. It has been suggested that in such cases the pressure be relieved by making incisions through the fascia for the purpose of securing drainage, and it seems to be a very logical procedure. This has been done in a few cases with apparently happy results; we have had no personal experience, but would not hesitate to resort to it in case of necessity.

Once the contracture is established, treatment can only be directed toward securing what improvement is possible; rarely is a complete recovery made. It is in this stage

that we feel the division of cases into the two types described is useful in enabling us to determine the form of treatment which will insure the best outcome.

Today I wish to direct your attention particularly to what we have designated as the first type of Volkman's ischaemic contracture. In this type, there is damage to both nerves and muscles, but the muscle damage has resulted in only moderate destruction of the flexor muscles so that we have left a useful amount of contractile tissue. We believe under these conditions that the nerve supply to whatever muscle tissue is left intact becomes of paramount importance if we are to get the most from it in function and that every effort should be made to restore nerve conductivity so far as possible. In this type of Volkman's contracture we do an immediate exploration of the nerves about the elbow for the purpose of determining the amount of nerve

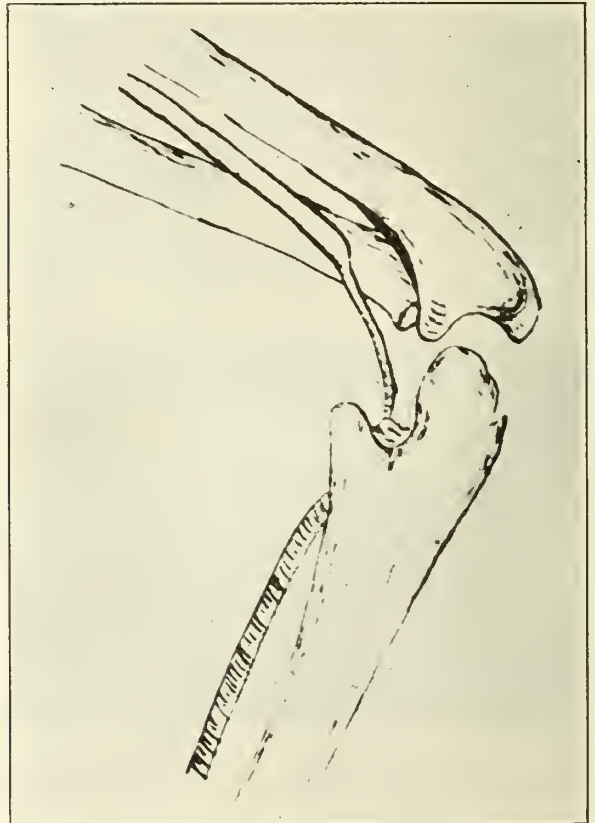


Fig. III. Diagrammatic picture of injury to the median nerve in Volkman's ischaemic paralysis—actual case at operation.

injury present and correcting it if possible. As a rule, we find the median nerve severely damaged (Fig. III); the ulnar nerve at times involved and occasionally the musculospiral. In one case the median nerve was hooked over the distal end of the proximal fragment, but usually it is found embedded in and compressed by a mass of dense scar tissue, apparently organized blood clot and inflammatory exudate. In no case have we encountered complete severance of any of the nerves at the elbow.

The procedure carried out on the nerve or nerves has been in all cases a careful neurolysis and transplantation of the nerve into a new bed where it is surrounded by normal muscle tissue. In doing the neurolysis, the thickened sheath is dissected off and the fibrillae separated by dissecting out the scar tissue lying between them so that at the end of the operation the nerve is soft and compressible instead of being a hard dense and almost cartilage-like cord. The greatest care should be taken to see that there are no bands of scar tissue left which may later contract and cause pressure and that all hemorrhage is controlled and the wound dry. We feel that this procedure relieves a definite pathological condition and ensures the damaged muscles of the best nerve supply which can be given them.

No attempt at correction of deformity is made before operation. At the time of operation a cast is applied in the best position which can be secured, the amount of correction which is obtainable immediately after neurolysis is at times astonishing and inexplicable. The cast is wedged starting within a week or ten days of the operation and the wedging continued until overcorrection of the flexion is secured, the cast being changed as often as is necessary (Fig. IV). When the deformity has been corrected, a cockup splint is applied and physiotherapy given and continued as long as is necessary.

In our experience neurolysis has proven most satisfactory, and we are convinced



Fig. IV. A wedged cast to secure gradual correction of flexion deformity.

that if used in properly selected cases, it will result in the return of an amount of function which cannot be obtained by any other form of treatment (Fig. V). It should be emphasized, however, that time is a very important factor if the neurolysis is within six months a very excellent outcome may be expected; cases operated upon a year after injury do not do nearly so well, while those operated upon a year and a half or two years after injury rarely regain any useful amount of function.

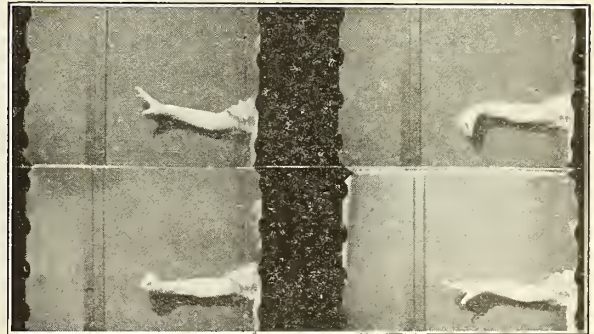


Fig. V. Result after neurolysis of the median nerve—six months after injury.

In cases falling in type two, where there has been so much muscle destruction that practically no contractile tissue is left, little or nothing can be expected of nerve operations. We are accustomed, however, to do a neurolysis if there is even trace of muscle present, but as a "forlorn hope" than with the expectation of much result, although in a few cases there seems to have been some definite benefit.



Fig. VI. (a) Hand before stretching.

In type two cases, unquestionably the best results are to be obtained from gradual stretching of the contracted fingers and wrist according to the method of Sir Robert Jones, which often gives an astonishing amount of use, and at least overcomes the extreme deformity (Fig. VI). Shortening of the bones of the forearm has been done frequently and is a useful procedure in some cases. We have used it but once with quite a satisfactory improvement. Tendon lengthening has not been satisfactory and we have practically abandoned it.



Fig. VI. (b) Partly stretched by a wedged cast.

We have operated upon 16 cases in the past seven years. In these cases the median nerve was involved 10 times; the median and ulnar were involved 4 times, and all three nerves twice.

The results were excellent in 9 cases, all of which were operated upon within 8 months of the injury. Fair results were secured in 5 cases; these were operated upon from one to two years after injury. In 2 cases no result so far as return of function was secured; these were both of

the second type with extensive damage to both the flexor muscles and the nerves.

In Volkman's ischaemic contracture we have a condition which causes severe deformity and complete or almost complete loss of function. It is a condition which offers almost insurmountable obstacles to cure, unless its onset is detected early and measures taken at once to remove the cause. Once established, complete recovery is rarely secured, but not all cases are hopeless. Based on the experience we have had with neurolysis in our clinic, we believe that this procedure offers a very definite expectation of excellent results when used in properly selected cases and when done within six months, or even one year of the time of injury. Certainly no harm can come from the exploration of a nerve which is clearly damaged nor from instituting measures which at least favor the return of conductivity in a damaged nerve or nerves. The tendency today is to take the view that muscle damage alone is the cause of deformity and impaired function, and that nerve injury is of little or no importance. Certainly this is not true in all cases of Volkman's ischaemic contracture, and in all fairness to the patient a careful estimation of the condition present should be made, and in favorable cases a neurolysis done as soon as possible. Failure to do this may mean disaster to a patient in whom a useful hand might have been secured, and leaves us open to the criticism that everything possible had not been done to insure recovery.

DISCUSSION.

Dr. Paul McIlhenny (New Orleans): This paper is extremely interesting not only to those of us who are interested in correcting and preventing deformities but also to those who are interested in industrial and private surgery. It deserves our very serious attention. Prevention is naturally the goal to be striven for, but Dr. Dickson's splendid results from his method of treatment give us hope for ultimate function even in those cases which apparently come to us too late.

Dr. Bradburn (New Orleans): I agree with Dr. McIlhenny that it is particularly encouraging to see results in this type of deformity where

there is some nerve involvement. I thought it might be interesting to investigate what percentage of cases of injury developed this special complication, but unfortunately the hospital records are not so kept that I could discover the information. However, the records of the last six years from the special fracture service instituted at Charity Hospital in 1923 are more accessible, and from them I have discovered that in 6769 fractures treated during that time, only two were complicated by Volkmann's ischemic paralysis. Dr. Newell reported 2374 fractures in which only one such case developed, which gives us an average incidence of something like one to every 3,000. The condition is not always associated with fractures. In one very interesting case reported by Long it followed a hemorrhage into the fascia which developed in a hemophilic. I myself observed a similar case, in the leg, in which hemorrhage occurred into the muscles as the result of a football injury. The essential pathology, as Dr. Dickson says, is a myositis, the nerve involvement is merely a complication. His experience, by the way, differs from that of the late John B. Murphy, who in 1914, at a meeting of the American Medical Association, reported 50 such cases over a period of 5 years, in none of which was the nerve involved. He was a strong advocate of tendon elongation, and reported excellent results from it. My own experience parallels Dr. Dickson's in the few cases which did not originate in the Hospital, but came in for treatment; nerve involvement was present in them all. As to prophylaxis, we have a standing order on our service that after the application of a cast in the closed reduction of a fracture, morphia is to be given only under the personal supervision of a physician; the relief of pain in this type of case is not left to the discretion of the nurse. Splints and bandages, however, are not always the cause. Bodenbauer reports only case in which no bandage had been applied, and in one of the cases I located at Charity, there had been no splinting of the limb.

Dr. Isidore Cohn (New Orleans): Sir Robert Jones in his most recent work on this subject very dogmatically declines to consider anything else but the muscular side of the situation, whereas most of us who have seen these cases will agree with Dr. Dickson that in certain instances, at least, there is an associated nerve injury. The only point on which I differ with him is a slight one, whether, in our teaching, we had not better stick to the old idea that the essential pathology is an interference with the venous return, and emphasize the fact that the nerve involvement is a secondary consideration. The division into two groups is a wise one for that reason. There can

be no question that if there is nerve damage or interference with conductivity, neurolysis gives excellent results. I do not see how even a skeptic could fail to be convinced after seeing the excellent pictures Dr. Dickson has shown us.

Dr. Urban Maes (New Orleans): I am grateful to Dr. Dickson, not only because he has presented his subject in such an able manner, but also because he has taken Volkmann's ischemic paralysis out of the category of splint injuries. In years gone by we believed and taught that this condition was always the result of improper splinting or too tight bandaging. It was Dean Lewis who some years ago first pointed out that this was not true. For my own part, in discussing Newell's paper which has just been referred to, in which he reported some two thousand odd injuries with only one example of Volkmann's ischemia, I made the point then that in many cases this condition due to what I chose to call a sub-aponeurotic hematoma. The hematoma may not always be present, but swelling from some cause is, and the sub-aponeurotic pressure is the important etiological factor. I mention this point again, because in the multitude of facts which Dr. Dickson brought out, it might possibly have been overlooked. Prophylaxis is the all important consideration in the treatment of the condition. When the typical initial signs of the condition appear, I would advocate the prompt removal of all dressings, and for my own part, I do not hesitate to make multiple incisions in the aponeurosis. Sometimes there is a free escape of blood, sometimes there is not, but I always feel that I have taken every possible step to prevent the establishment of a disastrous condition, which can only be checked by prompt recognition of its onset by immediate liberation of the sub-aponeurotic pressure.

Dr. E. S. Hatch (New Orleans): I want to add my vote of thanks to Dr. Dickson for giving us such an excellent presentation of this subject; and should like to ask him in closing to say a few words on tendon lengthening in these cases. Most of us do not find the method as effective as it is sometimes made out to be.

Dr. E. D. Fenner (New Orleans): I rise to emphasize two points. The first is that the young man just beginning his surgical career is extremely prone to under-estimate the importance of pain and swelling in a bandaged limb. This is apparently a very uncommon complication of injuries, but its outstanding lesson is that pain, numbness or swelling in a bandaged limb should be the indication for the instant release of the constriction present. The second thing is that, while I agree with Dr. Dickson that neurolysis is

a very beneficial procedure in selected cases, the impression should not be absorbed that it should be a routine procedure in every case of Volkmann's paralysis. A good deal of intelligence, of judgment and of experience is necessary to decide when it should be done. I might add one thing further. The statistics presented would lead us to believe that in spite of the enormous number of fractures handled in our hospitals, this is a very rare complication of them. That is quite true, but I think that the statistics presented from the local hospitals are misleading, for I know that I myself have seen two or three cases of this condition which I am sure have not been included in Dr. Bradburn's figures.

Dr. F. D. Dickson (Closing): Dr. Fenner in his remarks made one point which I desire to emphasize also. I do not think the statistics which have been quoted are quite accurate, for we cannot arrive at the incidence of this condition by an investigation of ordinary fracture statistics. I have operated on 16 cases during the last 7 years, but I have seen a total of 47 cases during that time, which came to me from all parts of the country. What the frequency of the complication is I cannot tell you accurately, but I think a conservative estimate would be 5 or 6 in every thousand fractures of the elbow. As to whether or not nerve damage is present in this condition, Dr. John B. Murphy to the contrary, I want to say that I have never seen a case which did not exhibit some nerve involvement. I have opened too many of them to make this statement lightly. I am a warm advocate of neurolysis for the first type of Volkmann's ischemic contracture, in which there has been only a moderate destruction of the flexor muscles, and I will even operate on patients in whom I suspect the nerve damage to be very great because I know I cannot do such individuals any harm, and I feel that I have frequently done them considerable good. The nerve supply of the undamaged muscle is a most important consideration in the cure; you cannot expect a muscle to function without a proper nerve supply any more than you could expect a garden hose to function if it were wrapped around by wire. I have had patients come to me who have been given a very gloomy prognosis in some of our best clinics, but in any case in which there has been only a moderate destruction of the flexor muscles, I do not hesitate to promise them some relief. It is the case in which only the bones of the forearm are left, in which the muscle is merely a mass of scar tissue, which I hesitate to touch. The boy to whom I have alluded represented such a type, and I undertook his case only because his family did not permit me to refuse it. For all practical purposes he had no muscles left.

I did a neurolysis, and made two long tendons out of such isolated functioning muscle as I could find, transplanting the extensor tendons of two of the toes and running them down on top of the muscle mass. He can barely move his fingers, but that is more than he could do before, and that is something to have achieved in a case which looked utterly hopeless. In one or two instances I have shortened the bones because the contracture was so extreme I could not get the hand into hyperextension, and under such circumstances I prefer this procedure to tendon lengthening. Dr. Davis, with whom I was associated for many years in Philadelphia, was a great believer in tendon lengthening. I saw perhaps half a dozen cases so handled on his service, and I did one or two myself, but neither in his cases nor in my own did I think the results comparable with neurolysis, and I have long since abandoned the method. Lengthening of the tendons is an intricate procedure, particularly if, as often happens, there are dense adhesions to be dealt with, and better results are secured by less complicated methods.

PHARYNGO-ESOPHAGEAL DIVERTICULA: A GENERAL CONSIDERATION.*

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NEW ORLEANS.

Esophageal diverticula are not increasing in incidence, as the increasing literature on the subject would lead us to believe. They are simply being recognized with increasing frequency. Bell, in 1816, first called attention to them as a clinical entity, and the classification into the pulsion and the traction groups, which we still employ, was made by Rokitsansky in 1840. In 1877 Zenker and von Ziemssen described the pharyngo-esophageal type with such precision that but little has been added to our knowledge of it since that time. A year earlier Nicoladoni, acting on the old suggestion of Bell, first attacked them surgically, by the creation of a fistulous opening into the sac, though it was not until 1890 that the first successful extirpation, for that matter the first successful operation of any sort, was performed by von Bergmann. At the present time, thanks to the roentgen-

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ray and the esophagoscope, these diverticula are being diagnosticated with little difficulty, while the appalling mortality of the early surgical procedures has practically disappeared with the employment of the two-stage method of extirpation, devised by Goldmann of Freiburg in 1909 and successively improved by C. H. Mayo and John B. Murphy.

There are two chief types of esophageal diverticula, the traction and the pulsion. Traction diverticula need not concern us long. They may occur at any point along the esophageal tube, though they are most numerous at the level of the tracheal bifurcation, where lymph nodes are most numerous, and they may be multiple. They are really simply a protrusion of the esophageal wall caused by the traction of surrounding structures which have been involved in some chronic inflammatory process terminating in cicatricial contraction. Most often this process is of tuberculous origin; less often the diverticula are the result of vertebral caries. They are usually symptomless unless, as occasionally happens, particles of food lodge in them, or, as has been reported in two instances, both in tuberculous patients, rupture occurs into the lung or the bronchus. Obviously they are of little clinical concern.

The pulsion type, on the other hand, is of greater clinical interest because it gives rise to definite symptoms. These pharyngo-esophageal diverticula, as they are more correctly termed, are located always in the same spot, the posterior wall of the esophagus, directly back of the cricoid cartilage, at the junction of the pharynx and the esophagus. There are two principal theories as to their etiology. They were long considered to be herniae of the mucosa and sub-mucosa of the esophagus, and to be caused by a weakness of the muscle and covering in this special area, which is called, after the investigators who first pointed out the supposed abnormality, the Lannier - Hackermann area. Chevalier Jackson, however—and his words carry the

authority of a specialist who has performed literally thousands of esophagoscopies—does not consider the theory of congenital muscular weakness a reasonable one. Indeed, he believes that while the walls of the esophagus and pharynx are weak everywhere, they are rather better supported in the cervical than in the thoracic region. Pulsion diverticula, in his opinion, involve all coats of the wall, and all of them have a functional cause, an incoördination of the crico-pharyngeus muscle. This muscle, it will be remembered, has what he terms a “pinch-cock” mechanism, which, acting at the proper moment, relaxes the tonically closed upper end of the esophagus and permits the alimentary bolus to enter. If for any reason it fails to function, an unyielding barrier is presented to the advance of the food column, which, by its pressure, causes a dilatation above the pharyngo-esophageal junction, and this dilatation eventually develops into a true diverticulum.

The clinical aspect of pharyngo-esophageal diverticula is naturally our chief concern. They are most frequent in men and the syndrome is rather constant. Symptoms seldom appear before middle life, although Jackson and Shallow report one case, in their opinion of congenital origin, in which the patient, an unusually intelligent physician of 54 years of age, gave a definite history of definite symptoms extending over at least 40 years. As a rule, however, the patient is of middle age or beyond it, one of Lahey's patients being 84 years, and the average age in Judd's, Jewett's and Sturgeon's series being respectively 55, 63 and 64 years.

The onset is insidious and symptoms may be present for several years before medical advice is sought. There is first a sensation of dryness in the throat, then an increasing difficulty in the deglutition of granular food and finally of all food. As the sac increases in size and the esophagus is more and more occluded by external pressure, there may be a sensation of pressure, sometimes of

actual pain, referred to the base of the neck or the retrosternal region. There is more or less regurgitation of food, usually involuntary and often occurring during sleep, for the purely mechanical reason that, with the esophagus occluded by pressure, food taken after the diverticulum is filled must of necessity regurgitate into the mouth. Many of these unfortunate patients learn by experience that food can best be taken in the reclining position, with the head and neck downward, in which position the orifice of the sac is directed upward and food cannot enter it. Gurgling noises in the throat are an annoying feature, and often there is an irritating cough. These patients are peculiarly susceptible to respiratory affections, chiefly chronic bronchitis, due to the overflow of the pouch and the trickling down the trachea of irritating fluids. One of my patients, I might say in this connection, died a year after he had been surgically relieved of his diverticulum, of a terminal pneumonia superimposed on a purulent bronchitis with a bronchiectasis of both the tubular and the saccular varieties.

Diagnosis is not difficult. A patient who exhibits any or all of the above symptoms should be promptly examined by roentgen-ray, with the aid of a barium meal. The findings are usually conclusive, though it might be emphasized that examination in the oblique position as well as the anterior-posterior is a wise measure. This was well illustrated in the case reported by Fineman, in which carcinoma of the cardiac end of the stomach was reported in two radiographic examinations, but only in the third, in the oblique position, was the diverticulum observed, although it extended almost down to the diaphragm. Large diverticula are often visible externally, or may be palpated as the patient ingests food or fluid. Regurgitation of the food ingested while this maneuver is carried out is pathognomonic. Esophagoscopy should be routine, to eliminate stricture and carcinoma. These measures are so precise

that there is no longer any reason for resorting to the older complicated, uncertain and often dangerous diagnostic aids.

The treatment of esophageal diverticula is essentially surgical. Palliative measures not only do no good, but are actually harmful in that they may cause postponement of the operation until the sac has become intra-thoracic, when its removal may be extremely difficult if not actually impossible. In the case reported by Fineman, for instance, to which I have just alluded, operation would have been very hazardous, for the sac extended through the posterior mediastinum almost to the diaphragm. In a similar instance in my own practice the diverticulum reached the cardiac end of the stomach. It was my intention to attempt its removal, but I deemed it wiser to do a preliminary gastrotomy, to eliminate post-operative difficulties; the patient was so well pleased with the results that he refused to permit me to extirpate the sac, and today, many years later, he is feeding himself entirely through the tube, taking nothing by mouth, and he still has his diverticulum.

The earliest surgery suggested for esophageal diverticula consisted simply of the creation of a fistulous tract into the sac, which was later removed, the esophageal opening being closed by sutures. The mortality, however, was formidable, both because the esophagus does not hold sutures well and because infected material, escaping between the stitches and following the cellular planes of the neck, found its way into the mediastinum, causing suppuration which almost invariably terminated fatally. Such a case as that recently reported by Norton from the Mayo Clinic is almost unique, in which recovery followed the development of a huge mediastinal abscess after the first stage of the double operation for diverticulum.

The second proposal was to invaginate the sac into the esophagus. This may be possible with small pouches, but it is impractical with large ones, and is extremely

dangerous besides. C. H. Mayo notes that in one case, reported by Bevan, in which this method was employed, the sac was forced upward in the act of vomiting and death ensued from suffocation caused by blocking of the trachea. Even if such a contingency does not come to pass, the method is obviously unsound surgically.

The accepted procedure today is complete extirpation of the sac, and the only question is whether the operation should be done in one stage or two. Jackson and his associates believe that the one-stage operation, done with the esophagoscope in position, is not only safe but is more likely to result in a permanent cure; they are opposed to the two-stage method because the second procedure must be done in inflammatory tissue. They report by their technique 15 cases with one fatality, that being due to a massive collapse of the lungs. From the Mayo Clinic, on the other hand, comes a report of 74 cases done by the two-stage method, with only three fatalities and with practically perfect final results in the remaining 71.

The operation itself is quite simple. The incision is made along the anterior border of the left sterno-mastoid muscle, where the sac is most accessible. The region of the esophagus is brought into view by careful anatomic displacement of the carotid sheath with its contained structures and the thyroid gland, and the sac is identified and by gentle traction is delivered up to its neck, at which point it is fastened by a few sutures either to the skin or to the sterno-mastoid muscle. About 12 days afterwards it is excised, the gap being closed with a few interrupted sutures and the neck wound being left open for drainage. Usually the space closes by granulation within three weeks; if a sinus should remain after this time, it ultimately closes by the employment of the usual methods. Post-operative roentgen-ray examination may show a slight pouching of the esophagus at the site of extirpation, but it is my experience that this in no wise interferes with deglutition.

No anesthetic is necessary for the second stage of the operation, and the first is best performed under local analgesia, chiefly that Willard Bartlett's suggestion may be put into effect, that after the esophagus is exposed the patient be instructed to close his lips and his nostrils and endeavor to blow out his breath. By this maneuver the sac is forced into the operative incision and its identification is facilitated. With the conscious patient, too, there is not the danger, pointed out by C. H. Mayo, that a sac which has been imperfectly emptied of food may relax under anesthesia and spill its semi-putrid contents into the trachea, thus exposing the patient to the danger of aspiration pneumonia if not of suffocation.

I see no advantage to Murphy's suggestion that the sac, on its delivery, be slightly twisted, a procedure which certainly introduces the possibility of necrosis from an impaired circulation. Lahey's point, however, is well taken, that the sac should be fastened in the incision in an upright rather than a horizontal position, thus avoiding its distention by food particles and its possible gangrene. The same author utters a warning that it must not be dragged too far out into the wound, in which case a dangerous angulation of the esophagus may be produced. For my own part, I would suggest that particular care be exercised in the choice of needles. In one of my cases I tore the thin wall of the pouch by the use of a needle with a large eye, and in spite of what I considered adequate drainage, the slight escape of fluid into the cellular tissues of the neck resulted in a cellulitis which was controlled with considerable difficulty.

These patients usually react excellently from the first stage of the operation. They are frequently able to be out of bed, and often they can swallow normally at once. If, however, they cannot take food by mouth, the introduction of a Levin or a Rehfuess tube quickly solves the problem, or, as Lahey suggests, it is even possible to feed them through a tube introduced into

an opening made in the apex of the sac and carried down into the stomach. These post-operative methods, plus the liberal use of fluids beforehand, by hypodermoclysis or infusion if indicated, make a primary gastrostomy seldom if ever necessary.

CONCLUSIONS.

1. The prompt recognition of pharyngo-esophageal diverticula, which is the most important point in their cure, can be achieved only by a closer coöperation between the surgeon and the nose and throat specialist, whom such patients usually consult first.

2. Their existence should be suspected in all patients who exhibit a chronic cough, dysphagia and regurgitation of food.

3. The diagnosis is simple with the aid of a barium meal and the roentgen-ray, plus esophagoscopy.

4. Two-stage extirpation of the sac under local analgesia is the treatment of choice. The operation is free from danger if care be taken to avoid aspiration pneumonia from the insufflation of infected food particles, and infection of the mediastinum by primary soiling or post-operative leakage.

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Dr. Urban Maes, following the presentation of his paper on Esophageal Diverticula, exhibited slides demonstrating the appearance of one of these anomalies, the method of incision and exposure in the first stage of the two-stage operation of complete extirpation, and the maneuver, suggested by Willard Bartlett, by which the patient, during the operation, is instructed to close his lips and nostrils and endeavor to blow out his breath, by which means the diverticulum is forced into the operative wound.

In closing his remarks, Dr. Maes emphasized again the wisdom of employing this simple method of identifying the sac of the diverticulum, and pointed out that it obviated the use of instruments in its delivery, thus lessening the chance of tearing its wall and causing an infection of the cellular tissues of the neck, which might result fatally.

LATERAL SINUS THROMBOSIS*

A REVIEW OF THE LITERATURE AND REPORT OF FOUR CASES

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That the etiology of lateral sinus thrombosis is nearly always secondary to a suppurative process in the middle ear and mastoid process there is little doubt. The so-called "primary" thrombosis is of the jugular bulb with no intervening suppuration in the mastoid process seems rather unsettled from a review of the literature.

The incidence of occurrence of lateral sinus thrombosis in acute and chronic suppurative mastoiditis is fortunately not so frequent. Hill reports 7 in 166, Downey 5 in 79, Gerber 25 in 524, Welty 3 in 300, Mass. Eye and Ear Infirmary 19 in 497, Manhattan Eye, Ear, Nose and Throat Hospital 11 in 588. In our series at The University of Virginia Hospital, of the mastoid cases acute and chronic admitted to the hospital during 1927, between five and six percent were complicated by lateral sinus thrombosis. That it occurs much more often than diagnosed is certain since many cases

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presenting a typical picture of sinus thrombosis get well spontaneously without operative intervention. Day reports 45 cases of lateral sinus thrombosis with spontaneous recovery in six cases without operative interference. Phillips states that spontaneous recovery takes place with comparative frequency.

The mode of infection is perhaps best summarized by Phillips, and may be "(1) Through anatomic dehiscence in the bony tissue of the parietal wall, (2) by direct extension of the purulent lesion of the bone, (3) by involvement of the smaller veins of the diseased bone, (4) by involvement of the intermediate anastomotic veins in the thrombotic area."

The peculiar anatomy of the lateral or transverse sinus renders it more liable to infection than any other of the dural sinuses, since it is closer to the surface in an area of potential infection in the mastoid portion of the temporal bone, and since it is *intradural*, i. e., covered by a half thickness of dura, whereas other dural sinuses are covered by a whole thickness. The part of the lateral sinus most often involved is the knee, or beginning of the sigmoid sinus just below the entrance of the superior petrosal sinus, since it is more superficial at that point and in closer contact with the mastoid cells. The right lateral sinus is more often involved than the left due no doubt to differences in anatomy. Both lateral sinus may begin by a division of the superior sagittal and straight sinuses at the torcular herophili grooving the internal occipital protuberance, and from there grooving the occipital, parietal, and temporal bones respectively, ending in the jugular bulb on either side. More often however the left is a continuation of the straight sinus which drains the interior of the brain by way of the great vein of Galen and the inferior sagittal sinus. Whereas, the right begins at the torcular herophili as a continuation of the superior sagittal sinus which drains the superficial surface of the brain by way of the superior cere-

bral veins and the superior sagittal sinus. The principal affluents of the right lateral sinus then are (1) the superior sagittal sinus which receives blood from the diploe veins of the skull, the meningeal veins, the superior cerebral veins, and emissary veins which communicate through the parietal foramen with the veins of the scalp, and through the foramen cecum with the veins of the nasal cavity; (2) the superior petrosal sinus which drains the orbit and pterigoid plexus by way of the cavernous sinus; (3) emissary veins which communicate through the mastoid foramen with the occipital veins, through the condyloid canal with the deep veins of the neck, and through the hypoglossal canal with the deep veins of the neck. The affluents of the left lateral sinus differ from those of the right only in the affluents of the straight sinus which drains the interior of the brain through the great vein of Galen and the inferior sagittal sinus. If then, as claimed by most workers, thrombosis is nearly always due to intra-sinus infection, the right lateral sinus would be more liable to infection and thrombosis since it receives the surface drainage, and would be more often affected by inflammations of a localized character affecting the meninges.

The type of infection in lateral sinus infection and thrombosis is almost invariably a hemolytic streptococcus, and is most likely to be encountered in suppurative mastoiditis complicating measles and influenza.

The pathological process is usually a periphlebitis, phlebitis, endolphlebitis, thrombosis, general bacteremia, usually in the order named. The vein wall may look perfectly normal, however, and yet be thrombosed. On the other hand it may be surrounded by a perisinus abscess and covered with granulations and yet contain no thrombus. The type of thrombus is usually of the mixed variety. In extent it may be mural and not occlude the sinus, or it may obstruct the lumen and be so extensive as to reach from the torcular herophili to the

jugular bulb and even invade communicating sinuses. The subsequent or secondary changes in the thrombus or clot may be liquefaction or softening due to infection, or organization. Pathology elsewhere in the body incident to or accompanying lateral sinus thrombosis may be (1) Bacteremia, which many writers say is always present at some stage of thrombus formation as evidenced by positive blood cultures (Naftger, Oppenheimer), while others (Kopetzky) say one may have repeated negative blood cultures with thrombosis of the lateral sinus or internal jugular vein; (2) Metastatic abscesses which may be intracranial, i. e., brain abscess or purulent meningitis, or visceral affecting most often the lung, joints, kidney and spleen. Nephritis is almost constant, endocarditis is frequent, and papillitis sometimes occurs.

As to the time of occurrence of lateral sinus thrombosis following mastoiditis, I believe I may safely say that it may occur almost at the onset, or it may be days or months after the acute attack. There are certain types of cases, however, in which one should always be suspicious of a complicating lateral sinus thrombosis following a mastoid operation: "(1) In painless cases of mastoiditis where a hemolytic type of infection is present accompanied by a perisinus abscess; (2) If the primary lesion reaches to and includes the sinus at the primary mastoidectomy, and later untoward symptoms develop that cannot be accounted for elsewhere." (Kopetzky.)

The diagnosis in typical cases is fairly easy, but in atypical cases may be most difficult. Atypical cases are more apt to occur in children as a review of the literature will show. Diagnosis in typical cases is based on the clinical picture, and positive blood cultures, keeping in mind of course the history of the case. The typical clinical picture is obvious to all, but many cases do not present the typical picture. To summarize all the useful diagnostic criteria which may be resorted to in atypical cases of difficult diagnosis we have: (1) The

clinical picture, which may be very useful, or useless, in suggesting a diagnosis; (2) Positive blood cultures which nearly always indicate a sinus involvement in cases of this kind, yet repeated negative cultures do not exclude thrombosis. Duell and Wright report 57 cases with positive blood cultures in only 16, about 28 per cent; (3) A leukocyte count around 20,000 with the greatest increase in polys. One of our cases had a leukocyte count of only 8000, while the average count in Kopetzky's cases was 27,000 with the highest 39,000; (4) Tenderness over the mastoid emissary vein below the tip of the mastoid process and over the internal jugular; (5) Crow's sign: Pressure over a normal internal jugular produces a dilatation of the veins of the forehead, temple and retina; (6) Mahler's symptom: A step-like rise in pulse rate. Heidemann reports six cases of latent thrombosis recognized by this sign; (7) Appearance of the sinus wall, i. e., necrosis or sloughing spots, and lack of pulsation on palpation. Neither of these is reliable, but may be useful in some cases; (8) Aspiration of the sinus contents under strict asepsis may be especially useful in cases of double mastoiditis when the sinus involved has to be decided. If no fluid is obtained on one side the assumption is that is the side thrombosed. Bacterial counts and cultures from the two sides may also be helpful in determining the side involved (Kopetzky, Phillips); (9) Stiffness and retraction of the neck on the affected side. This occurred in one of our cases; (10) Tenderness and enlarged glands at the angle of the jaw (Campbell); (11) Queckeustedt's test: as applied by Tobey in a series of 84 cases consists of "placing the patient in a lateral position, lumbar puncture is performed and fluid allowed to run into a manometer of 2 mm. bone. The initial pressure reading is noted, also presence of pulse and respiratory oscillations. Then the head is extended by an assistant and gentle pressure applied between the larynx and sternocleidomastoid muscle

until he feels a strong carotid pulsation during compression. The operator watches the rise of the fluid column of the manometer, promptness of beginning, and height it attains, and on release of jugular compression rapidity of drop in pressure. The procedure is repeated on the opposite side of the neck and then compared with both sides pressed simultaneously. In typical cases of lateral sinus thrombosis there is a prompt rise of fluid pressure to two or three times the initial reading when the internal jugular vein draining the normal sinus is compressed. The pressure rise is normal, being equivalent to the pressure attained when both jugular veins are compressed. Pressure over the vein draining the thrombosed sinus area causes either no rise, or more commonly a slow rise of from only 10 to 20 mm. in the manometer. These findings are characteristic of complete obliteration of the sinus. Partial obstruction from mural thrombosis naturally gives less striking results." This test was characteristically positive in two of our cases, and should be applied in the diagnosis of all difficult cases; (12) Spinal fluid examination is of little value as shown by Smith and Ayer.

The time allotted to this paper will not permit a discussion of the differential diagnosis.

In the treatment of lateral sinus thrombosis the most important measures are (1) early operation, (2) blood transfusions. The choice of operation is in the main two: (1) Phlebotomy of the lateral sinus and ligation of the internal jugular vein in the neck; (2) Phlebotomy of the lateral sinus with ligation and resection of the internal jugular vein in the neck. There is a question as to whether the sinus should be opened first, the thrombus curetted away, bleeding controlled, and then a ligation of the internal jugular vein in the neck, or whether the internal jugular vein should be ligated before opening the thrombosed sinus. Naftzger exposes and opens the sinus before doing the ligation. The safer

plan it seems to me would be to ligate the internal jugular vein before opening the sinus to prevent the mechanical dissemination of infected emboli into the free circulation. As to where to ligate the internal jugular there is no doubt that the ideal would be to ligate the internal jugular below the entrance of the facial, and also to ligate the facial vein, and this was the choice in our cases. Phillips says that it is easier to ligate below the facial, subjects the patient to a less lengthy operation, and accomplishes every required purpose.

As to the value of blood transfusions, a review of the literature shows that many cases have recovered with blood transfusions alone with no operative intervention, although, it is not my aim to advocate it alone without operation.

CASE REPORTS

Case 1. Mrs. B. K., white female, aged 33 years, was admitted to the hospital April 16, 1927, complaining of discharge from the right ear and deafness on that side since childhood. She was discharged well on May 15, 1927.

Since childhood the patient had had frequent earaches and a discharging right ear for varying intervals, and almost complete deafness in the right ear. One year ago following influenza the discharge became more profuse, accompanied by severe pain over the right mastoid, followed soon after by a remission. Since January (4 months ago) there has been almost continuous discharge of thick yellowish exudate with an offensive odor and intermittent pain over the right mastoid. There was no trouble with the left ear.

On examination the canal of the right ear was filled with purulent discharge. The drum showed a large perforation with a discharge from the middle ear. The upper teeth were carious. A loud blowing systolic murmur was heard all over the precordium, loudest at the apex. There was no cardiac enlargement; rhythm was normal. Temperature on admission was 99.2°, pulse 93, respiration 20.

Laboratory findings: Urine negative, W. B. C. 8000, Wassermann negative.

Diagnosis: Chronic mastoiditis.

Treatment: On April 16, under gas-ether anaesthesia, a radical mastoidectomy was performed. The lateral sinus was found located extremely superficial, and was exposed during the

process of chiseling the outer cortex. The cells overlying the plate were very sclerotic. The dura was exposed in the middle fossa. The usual closure without drainage except through the ear canal was done.

Progress: Patient did well until five days after the operation, when the temperature rose to 104.4° following a chill, with the patient extremely uncomfortable. There followed a sharp remission of the temperature with another rigor and temperature again to 104° twelve hours later. Blood cultures were negative; WBC. 7200. On April 23, the old mastoid wound was reopened and the sinus exposed. The internal jugular was isolated and doubly ligated below the facial, and cut between ligatures. The lateral sinus was then incised and found to contain an infected thrombus, which was curetted away until free bleeding was obtained above and below. The bleeding was controlled, the wound packed and left wide open. A Dakin tube was placed through the canal of the ear deep into the middle ear. The neck wound was closed with drainage. On the day of the second operation the patient received a blood transfusion by the citrate method, and another on the following day.

Highest temperature after operation was 99.4°, wound healed rapidly with no complications. Radical cavity healed in one month. Patient discharged well.

Case 2. V. E., a white male, aged 11 years, was brought to the hospital acutely ill July 12, 1927, by his family physician. He died July 30, 1927.

He was a sickly child and had had ear trouble all his life. Both drums had been opened several times and had drained almost continuously for several years. He was comparatively well until two weeks before admission, at which time the patient developed an acute coryza, accompanied soon after by pain in right ear. Three days later the pain became so severe patient was taken to family physician who did a myringotomy on the right side. The temperature dropped immediately and drainage was profuse. The temperature two days later rose to 103° following a chill, there was a remission in temperature and a chill with high temperature on the following day. The patient was brought to the hospital on July 12, at 1:00 a. m.

The temperature on admission was 103.5°, W.B.C. 16,000, Hb. 50, neck stiff on right side. There was marked tenderness over the right mastoid area. Chest examination was negative. A lumbar puncture revealed increased spinal fluid pressure, but otherwise normal spinal fluid.

Queckenstedt test negative for sinus thrombosis. The right ear drum was perforated and the ear was draining profusely. The left ear drum was thickened and retracted. The right antrum was cloudy on transillumination. The teeth were carious. Cervical adenopathy was present on both sides. The abdomen was fairly rigid, but no spasm of tenderness was present over any point.

Diagnosis: Acute mastoiditis, right; empyema right antrum; suspicion of lateral sinus thrombosis.

Treatment: A simple mastoidectomy was performed on the right side soon after admission. Bone involvement was found to be very extensive the sinus plate was fairly healthy looking. The sinus and dura was not exposed.

Progress: Patient continued to run a septic temperature with one or two remissions each 24 hours with chills and sweats until seven days later. Highest exacerbation of temperature was 105°, and lowest a little above normal. The blood cultures showed *Streptococcus hemolyticus*. At this time the lateral sinus was exposed and opened after first ligating the internal jugular and facial veins. Free bleeding was obtained from the upper end of the sinus, while the lower end bled only sluggishly. No definite thrombus was found. The wound was packed lightly with no attempt at skin closure. The neck wound was closed with drainage. The day following operation the patient received a blood transfusion and temperature rose to 106°. A rather marked facial and cervical edema developed on that day which could not be accounted for. He received another blood transfusion on July 24, and a third on July 29. He continued to run a stormy course with rigors and high exacerbations of temperature once or twice each 24 hours, sometimes going as high as 108°, with remissions oftentimes below normal. Died July 29.

Case 3. R. W., a white male, aged 6 years, was brought into the hospital July 9, 1927, with a profusely draining right ear, temperature 102°, acutely ill, a visible swelling behind the right ear.

The present illness dated back nine months, at which time the patient was admitted to the hospital with a discharging right ear of some three years duration. The examination at that time revealed an absence of the right ear drum and a middle ear filled with pus and granulations. A simple mastoidectomy was performed without exposure of the dura or sinus. A radical operation was advised at that time. Following discharge from the hospital at that time there has been almost continuous discharge from the right ear. Two days before the present admission pa-

tient began to complain of pain in the right ear, and a visible swelling appeared over the old mastoid incision.

Physical examination was negative except for a profusely draining right ear, absence of the right ear drum and the middle ear filled with cholesteatomatous material, and a red fluctuating area behind the ear.

A secondary mastoidectomy was performed. No fistulous tracts or necrosed bone found.

The patient ran an uneventful postoperative course for 8 days at which time he had a chill and the temperature rose to 102°, WBC 16,000, chest examination negative. The day following patient had another chill and temperature rose to 104°. In spite of the high temperature patient did not complain and showed little restlessness. Blood cultures negative. Spinal fluid pressure increased, and Queckenstedt test positive for lateral sinus thrombosis on right side.

At that time (10 days after secondary mastoidectomy) the old incision was reopened and a radical mastoidectomy performed on the right side. The sinus plate had an unhealthy color, although intact. The sinus was exposed and opened after ligation of the internal jugular and facial veins, and found to contain a large infected thrombus extending upward toward the torcular and downward toward the jugular bulb. The thrombus was curetted away, and bleeding controlled. The wound was packed lightly with no attempt at skin closure. The neck wound was closed with drainage.

In spite of repeated blood transfusions, the septic temperature continued with one or two remissions each 24 hours, with chills and sweats until June 18 when patient died.

Blood cultures were repeatedly negative, whether taken during temperature remissions or at the height of exacerbation.

Case 4. M. W., a colored female, aged 44 years, was admitted to the hospital December 10, 1927, complaining of pain in the left ear. Discharged well January 12, 1928.

The present illness dated from September 1, 1927, when the left ear began to ache. This was relieved by palliative treatment. Two months later

the same ear began to ache again and about ten days later ruptured spontaneously and began to discharge. A lump appeared behind the left ear which broke down and began to suppurate.

Physical examination revealed a well nourished female with noticeably poor hearing. The right ear drum was retracted and smooth. The left ear canal was filled with pus, drum thickened and perforated. The left fundus showed some edema. A suppurating wound was present over the left mastoid. Otherwise negative. Leukocytes 9600, RBC 4,200,000, Hb. 60, Wassermann negative, urine negative.

Diagnosis: Acute mastoiditis, left.

Three days later a simple mastoidectomy was performed which revealed a fistulous tract from the mastoid area through the outer cortex. The mastoid cells were filled with pus and granulations. The sinus plate was necrotic and surrounded by pus. The wall of the sinus was thickened and covered with granulations. After complete exenteration of the mastoid cells the lateral sinus was incised and a thrombus found completely occluding it. This was removed except at the lower end where it was found to be completely organized. Jugular ligation was not considered necessary. Patient made uneventful recovery.

SUMMARY.

The interesting phases in case 1 were the low leukocyte count, thrombosis following a radical mastoidectomy, negative blood cultures, and an uneventful recovery.

The interesting phases in case 2 were lateral sinus thrombosis, no doubt, on admission, positive Queckenstedt test, post-operative facial and cervical edema. Kopetzky reports a similar case, but offers no satisfactory explanation for the edema.

The interesting phases in this case were the time which elapsed between the primary mastoidectomy and development of lateral sinus thrombosis, and repeatedly negative blood cultures.

The interesting phases in case 4 were the lack of any septic symptoms, low leukocyte count, an organized thrombus, uneventful recovery.

EXPERIMENTAL OBSERVATIONS UPON POST-SCARLATINAL NEPHRITIS.*

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NEW ORLEANS.

One of the most interesting nephritides of man is that occurring as a sequel in scarlet fever, and commonly spoken of as afebrile post-scarlatinal nephritis. In these cases the symptoms of scarlatinal infection have passed and recovery has apparently been established when grave renal disturbances appear unaccompanied by fever. It is generally held that the new nephritic symptoms which appear weeks after convalescence from scarlatina are not those of a secondary infection or late manifestations of the disease. However, its cause and manner of production are imperfectly understood by both pathologist and clinician.

Based on clinical and laboratory investigations Longcope suggests that post-scarlatinal nephritis is the result of persisting foci of the specific streptococcus in some part or parts of the upper respiratory tract and adjacent spaces, as for example the tonsils, posterior nares, sinuses, etc. This author could not, however, obtain evidence that the streptococcus *per se* caused the late nephritis by actual invasion of the kidney from the blood stream, though the evidence was sought after by culturing the blood and urine from a large number of post-scarlatinal cases. Furthermore he was unable to demonstrate streptococci in the tissue sections or in culture from the kidneys of these patients. He did obtain evidence in the way of positive cultures from the throat that lead him to suppose that persisting foci of scarlatinal streptococci were responsible for the late nephritis, on the supposition that the toxin from these foci is absorbed and dur-

ing its elimination by the kidney causes the renal changes. This presupposes that the immunity established in scarlet fever is lytic and not antitoxic, otherwise the toxin that is absorbed subsequently would be neutralized in the blood stream and thus rendered inert before reaching the kidneys.

In order to obtain more light on this interesting sequel to scarlet fever, and especially as regards its causation and manner of production, we have carried out a series of experiments upon the dog, employing the living culture, killed culture and toxic product of the scarlatinal streptococcus as the nephrotoxic agent. The dog was used by choice because this animal is extremely susceptible to infection with this microorganism, and also to its toxic product which commonly produces a grave nephritis.

The acute nephritis induced in the dog with scarlatinal streptococci or their toxic product is essentially of two forms, parallel in every way to the two types described for man. The work was carefully controlled, using only animals known to be free from nephritis, as determined by daily examinations of the urine and kidney function tests. The toxin produces an acute glomerular lesion, while the living culture gives rise to a lymphocytic infiltration of the interstitial tissues of the kidney.

The kidney lesions occur during the infection, and may also be induced in the recovered animal several weeks later by injections of the toxin or large amounts of living culture without causing reinfection.

The subsequent behavior of recovered dogs that had received the living culture or its toxic product affords considerable proof that the toxin of scarlet fever is endotoxic in character. Animals that had recovered from the infection could not be reinfected with the same dose of the homologous living culture. However, if the recovered dog was given a very large dose of living culture, or a large dose of toxin, the animal

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developed a severe toxemia and acute hemorrhagic nephritis in a few hours. It is noteworthy for the animals that had received living culture, though highly toxic, did not become infected, as was evidenced by negative cultures from the blood and internal organs.

It would appear from the results of these experiments that scarlatinal streptococcal infection in the dog produces a lytic rather than an antitoxic immunity. If this is true for scarlatinal infection in man it is logical to suppose that the persistence of hemolytic streptococcal foci upon the mucous membrane of the upper respiratory tract, middle ear, sinuses, and so forth, would be the source of an intermittent supply of streptococci to the system, and that through the action upon them by an already existing lytic substance, a toxic product would be produced which affects the kidney, and largely because this organ is concerned in its elimination.

In explanation it would seem that the original dose of toxin or living culture given to the animals, causes the production of a lytic immunity. While such an immunity protects against a second infection, it is the means of inducing a more severe toxemia than was the case during the primary infection. Presumably the lysin produced in the dog originally, splits the second dose of living cocci, liberating therefrom a complex endotoxic product, which in the absence of sufficient antitoxin is free to act upon the kidney. Likewise, when toxin is injected it is free to act immediately upon the kidneys in a manner altogether similar to that of the toxin produced by the action of the lysin upon the living organisms.

The survival of scarlatinal streptococci in certain parts of the upper respiratory tract after the infection is over, may be explained partly on the ground that the micro-organisms are near the surface of the mucous membrane in direct contact with the outer air, so that escape outward is

readily effected through destruction of tissue, hence they are protected from the immune substances of living tissue. It may be assumed that with the invasion of the tissues in the early stages of scarlet fever, it became necessary for the invader to concentrate its powers in its immediate vicinity. For this purpose the product of streptococcal disintegration is of use in protecting the focus of infection by causing necrosis of the adjacent tissues.

The results of our experiments upon young dogs are positive proof that afebrile post-scarlatinal nephritis, in the dog at least, is caused by streptococcal toxin and is not the result of retained viable streptococci in the kidneys. In the recovered experimental dog which has been infected with living cultures of scarlatinal streptococci, a second or third dose of toxin produces a severe and often fatal acute hemorrhagic glomerulonephritis, which in every way corresponds to the afebrile post-scarlatinal nephritis of man. The animals tested before administering the toxin showed more or less lytic immunity; that is, a specific streptococcal lysin was demonstrable in the blood serum, and in consequence the animals could not be infected with the same dosage of living culture that had infected them originally.

Aside from the question whether it is a particular variety of hemolytic streptococcus that is the primary excitant of scarlet fever, the results of animal experimentation afford proof that streptococci are responsible for the acute glomerulonephritis during scarlatinal infection and also cause through toxic action the so-called afebrile post-scarlatinal nephritis.

The deductions to be drawn from these experiments are that persons who have recovered from scarlatinal infection, though lytically immune are not apparently anti-endotoxically protected against the toxic product of the scarlatinal streptococcus. Therefore, the toxin, which may be derived from persisting foci of the specific infection, is free to act and does

so upon the kidney effecting particularly the glomeruli. Thus by analogy may be explained the cause and manner of production of afebrile post-scarlatinal nephritis of man.

Dr. W. H. Seemann (New Orleans): I don't believe it would be fair to ourselves to neglect an opportunity to discuss this paper and emphasize some of the points. There is one thing that should appeal to everyone here whether he be a pathologist, clinician, surgeon or just a plain, ordinary citizen, the father of children.

My experience with all infectious diseases is that 99 per cent of physicians seem to believe that clinical recovery means complete histological recovery, which Dr. Duval's paper has further proved to emphasize as a false conclusion. Long after a child is up and around there will be destruction going on, lack of repair throughout the system and especially, as Dr. Duval has so strongly pointed out, in the kidneys.

The average child who is willing to remain in bed, or who goes to bed willingly, is an extremely sick child. My own past clinical experience has proved that to me. The minute a child is half way able to get up, he is willing to get up. I will say that 99.9 per cent of cases of scarlet fever do not have a close recovery control over the urination excretions in scarlet fever. Not only in scarlet fever, but in diphtheria, that should be emphasized. Here is one of the best opportunities of prevention. We have been too late to prevent the disease, but we can prevent the many sequelae by careful care of the patient and careful attention to examinations.

In regard to the other point Dr. Duval brought out with reference to foci of infection, I had a good deal of experience with diphtheria, and a good deal with scarlet fever. My opinion is, in 50 per cent of the acute infectious diseases on clinical recovery, the causative organisms are readily thrown off by the human body, provided no defects exist, and provided no bad sinuses exist where surgical corrections are needed. Then you will find persistent infection by the bacilli of diphtheria or the streptococci of scarlet fever.

There is another important point. Cultural methods, of course, ought to be substituted for the archaic method of watching skin desquamation. I don't know whether there is possibility of desquamation of the skin due to infection, but I think when there is infection it is due to contamination of the upper respiratory tract. I think the time is coming—we are doing it on a small scale—when sanitary control will be by the taking of cultures.

When these cultures persist beyond a reasonable time, it shows there is some repair work necessary.

Another thing: I don't believe facts have substantiated up to now a firm conclusion on that point—I believe that while immunity, if derived in scarlet, is lasting as far as a typical second attack of scarlet, the work shows it does not immunize a human against the invasion and possibility of destructive processes by that organism again.

There is another point I wish to emphasize. I believe that Dr. Duval made that point, and if he didn't, I should like to be corrected. I have always been a firm believer, despite the work that the Dicks have done, that the antitoxin suggested by Dochez is far superior because in it the streptococci are used as the antigen, and in that way not only antitoxins are produced but lysins are produced, as Dr. Duval has brought out, and they are very necessary.

I should like to know—I didn't hear anything in the doctor's paper—whether he made any experiments in these animals to see when he found a beginning nephritis whether the further use of antitoxin, I mean in the later stages after the clinical recovery, would be beneficial in retarding the advancement of this condition. It certainly would be a helpful discovery if we knew that and if there was some method by which we could further fortify the patient by additional doses of antitoxins.

I should like to inquire whether he has any figures in regard to the length of immunity. As far as the paper has brought out, there does not seem to be any prolonged antitypic immunity or antitoxic immunity. There seems to be, possibly, some anti-streptococcic immunity—I mean as far as preventing the invasiveness of the organisms. Those are the main points.

Of course, we are all very interested in this problem as we are in all problems affecting child health, and we luckily do not get, in my opinion, the severe cases of scarlet fever that we used to get, although we do, on occasion in exceptional cases, get pretty bad cases.

The old-time scarlet fever, due to lack of understanding of the mode of conveyance of the infection, and due to crowding and worse housing facilities, and what not, used to be a terrible thing. When I first started to practice I saw some cases of scarlet fever that were absolutely terrifying in their severity, and which were in a great percentage of cases fatal.

I certainly think this is a very timely subject, and I am glad I had the opportunity of listening to the paper.

Dr. I. I. Lemann (New Orleans): I am interested in Dr. Duval's work from another point of view. The whole field of nephritis is still quite clouded as to a proper classification. It is work such as this that will, as time goes on, give us more opportunity to form a clearer conception as to the nature of the various nephritides.

Dr. Duval's work is even more important than the work of Christian and others who have worked with unusual substances causing nephritis as, for example, uranium nitrate which is not likely to be the cause of human nephritis.

On the other hand, Dr. Duval's work naturally covers but one kind of nephritis, namely, a nephritis following a bacterial invasion. The clinician realizes that not all nephritis, particularly the long lasting insidious forms, can be regarded in the light of our present knowledge as comparable to the toxic nephritis represented by the studies of Dr. Duval. The time has come for us to discard the old conceptions that satisfied the clinician for a longtime of acute nephritis, chronic parenchymatous and chronic interstitial nephritis. Too many things have come up to cause dissatisfaction with these terms and with the conceptions that underlie them.

It is to be hoped that Dr. Duval, and other workers in the field, will be able to devise other methods for investigating the types of nephritis that we see come on in middle age and which cannot be correlated with bacterial invasion either from an acute disease or from some focus of infection.

Dr. A. A. Herold (Shreveport): In order to get a clear conception of what is termed "Post-Scarlatinal Nephritis," I should like to cite a case that came under my observation about three years ago and ask Dr. Duval to give me an opinion as to whether or not it was such a case.

I was treating a child with a rather severe attack of scarlatina. I gave the other children of the household passive immunization with serum. At that time it was comparatively new. Shortly thereafter the mother developed scarlatina. For fear some of the other children might be exposed after the period of the immunity from the serum had worn off, I started the other children on active immunization with the vaccines. In three days after the time I completed the vaccine, one of the children developed a low-grade fever and rash, followed by slight desquamation. A few weeks thereafter the family noticed swelling of the hands and feet of this child which had the slight fever, and one morning they called me suddenly. The child was having a violent convulsion, was quite edematous, and at that time had developed fever which it hadn't had previously,

as I figured, to the uremic toxemia accompanying it.

I contended that that was a case of post-scarlatinal nephritis and that the child had had an attenuated case of scarlatina due to the serum and vaccines. The consultant pediatrician in the case said it wasn't scarlatina at all, that the child was having a toxic nephritis from the vaccines due to the irritating effect. I should like to get an opinion from Dr. Duval.

Dr. R. G. Douglas (Shreveport): I should like to thank you all for this most illuminating paper full of valuable thought, most of which is entirely new to me, and I want to take advantage of this opportunity of asking a question instead of but-tonholing the doctor in the corridor after he goes out.

I recently lost a case of post-scarlatinal disturbance. The child came in with convulsions and coma and responded very promptly to the specific measures that we used. She came out of the coma within eight hours. Within four days the kidneys had cleared up with nothing in the urine, perfectly clear of albumin and cases. Her blood chemistry was normal. She started this renal attack, in three or four days began to decline and died within a week from a death that we thought was hepatic.

I want to know if the doctor, in his experience, found any hepatitis, and whether death was finally due to liver failure.

Dr. Charles W. Duval (New Orleans): In answer to Dr. Seeman, I first wish to say that, while I have had no experience with the use of scarlet fever antitoxin, either the Dochez or the Dick and Dick products, except in an experimental way, I am led to believe by clinicians of experience that the antitoxin has little value if any in the cure of scarlet fever. On the other hand, scarlatinal vaccine is of considerable value in the determination of susceptibility and immunity. Again the vaccine has great prophylactic possibility. The virtue of the vaccine lies in the fact that it produces an active immunity which is enjoyed for a period of months and perhaps years. Here it should be stated that the immunity to scarlet fever like typhoid is lytic and not antitoxic, which explains why antitoxin is of no greater value in the cure of scarlatina than it is in typhoid fever. The clinicians are too prone to regard scarlatinal antitoxin as having the same curative value as has diphtheria antitoxin. These two sera are immunologically different in their action in that one is lytic and the other is antitoxic.

The most important feature of scarlet fever is, in my opinion, the nephritis, since renal disturb-

ances, functional and structional, occur in practically ever case. Even in the mildest form of the disease, those in which there is no exanthem, the nephritis may be the only symptom. Again, the nephritis may not even be noticeable upon ordinary examination of the urine or even the functional test of the kidney.

It is interesting to know what occupies the clinical field at death in scarlet fever. In the majority of cases it is not the specific streptococcus *per se* that kills but the toxemia which effects by predelection the heart muscle and kidneys. Only in the case which has become septicemic can we say that the streptococcus is the direct cause of the mortality. We believe that the kidneys more often feel the blunt of the toxin than any other tissues because they are concerned with the elimination of the poison, and that the poison has an affinity for renal tissues.

In answer to Dr. Lemann regarding the long insidious forms of nephritis not comparable to the known toxic nephritides, I would like to know if the doctor has in mind the nephritides of the third and fourth decades of life that are ushered in without apparent cause?

Dr. Lemann: I mean the degenerative types of the fourth, fifth, and sixth decades of life, otherwise known as Bright's disease.

Dr. Duval: While we have no proof, most of us are of the opinion that in nephritis of Bright's disease there can be obtained a history of some previous streptococcal infection though not necessarily scarlatina which occurred years before, and perhaps as long ago as childhood. It is logical to suppose that during the streptococcal infection the kidneys were damaged. Later this damage was repaired and the renal function returned to normal. However, in the years to come the organs were unable to maintain their normal function and in consequence there developed clinical signs of nephritis. Karsner has shown that, in order to have signs of nephritis, more than 50 per cent of the glomeruli of the kidney have to be out of commission. With this in mind we can readily appreciate why there should be a period of years between the primary streptococcal infection and the inauguration of the Bright's disease, since symptoms of functional disturbances are not in evidence before a certain amount of the renal parenchyma has been destroyed..

In considering the etiology of Bright's disease we should always think of some previous streptococcal infection. Many of these infections are focal in character and located in some part of the upper respiratory tract, most often in the tonsils and teeth. Such infections may be chronic and long drawn out and caused by the viridans type

of organism. Recently there has appeared in the literature by investigators working at Johns Hopkins, proof that the *Streptococcus viridans* give rise through its toxic product to an acute endocarditis and at the same time a hemorrhagic glomerulo-nephritis.

In answer to Dr. Douglas, I would say that in my experience animals have not shown any serious histological changes in the liver following the administration of streptococci or their toxic product.

Replying to Dr. Herold as to whether the toxin or the vaccine could account for the severe nephritis that developed in one of his cases. Certainly the toxic product in a vaccine prepared from the streptococcus could give rise to the nephritis in question since it has a predilection for renal tissue. A vaccine prepared from the killed streptococcal culture when administered to a person induces primarily a lytic antibody which splits off from the streptococcal bodies a toxic principle. This toxic principle effects specifically the kidneys.

GASTRIC ACIDITY IN CONGESTIVE HEART FAILURE.

I. L. ROBBINS, M. D.,

NEW ORLEANS.

In congestive heart failure one is constantly impressed by the frequency with which gastric discomfort is noted. This discomfort is in large measure due to the marked distention of the stomach. It is well known that gastric distention and hyposecretion of the gastric juice, especially the acid, are frequently found to be co-existent. This fact suggested that a study be made to determine the gastric acidity in congestive heart failure.

For the purpose of this study fifty-one (51) consecutive cases of congestive heart failure admitted to medical service No. 6 at Charity Hospital were investigated. The symptoms presented in common were dyspnea, cough and pain. The signs were those of enlargement of the heart and liver with edema and ascites. Each patient was given an Ewald test meal and the contents aspirated at the end of one hour by

*Read before the Orleans Parish Medical Society, March 11, 1929.

means of a Jutte tube. Of this series of 51 cases, the youngest was fourteen and the oldest sixty-six years of age.

During the decade from 10 to 20 years, there was only 1 case. He had an achlorhydria.

During the decade from 20 to 30 years, there were 2 cases. One had a hypochlorhydria and 1 an achlorhydria.

During the decade from 30 to 40 years, there were 11 cases. One was normal; 3 had a hypochlorhydria and 7 an achlorhydria.

During the decade from 40 to 50 years, there were 15 cases. One was normal; 8 had a hypochlorhydria and 6 an achlorhydria.

During the decade from 50 to 60 years, there were 16 cases. One was normal; 3 had a hypochlorhydria and 12 an achlorhydria.

During the decade from 60 to 70 years, there were 6 cases. One had a hypochlorhydria and 5 an achlorhydria.

Of the 51 cases, 3 or 5.8 per cent were normal. Sixteen or 31.3 per cent showed a hypochlorhydria and 32 or 62.7 per cent showed an achlorhydria. From these tabulated results one is distinctly impressed with the fact that 48 or 94.1 per cent were below the accepted normal value for free hydrochloric acid. Of the 51 cases, 42 or 82.3 per cent occurred between the ages of 30 and 60 years. Of these cases there were 14 or 33.3 per cent who had a hypochlorhydria and 25 or 59.5 per cent who had an achlorhydria. Here again it is noted that 39 or 92.8 per cent were definitely below normal. It is of interest to note that the incidence of achlorhydria fell 23.6 per cent from the third to the fourth decade. From the fourth to the fifth decade there was a rise of 35.0 per cent. From the fifth to the sixth decade the achlorhydria again rose 8.3 per cent. For the hypochlorhydria there was a rise of 26.1 per cent from the third to the

fourth decade and a drop of 34.6 per cent from the fourth to the fifth decade. From the fifth to the sixth decade there was a drop of 2.1 per cent. It will be noted in these fluctuations the subnormal values were the ones involved whereas the number of normal cases remained constant. The highest free hydrochloric acid reading in the hypochlorhydric cases was 13. One reading of 20, although somewhat lower than the accepted normal standard of comparison, was placed in the class of normal cases. The average reading was 7.4.

In the total acidity readings of the 51 cases, 19 were between 5 and 10; 11 between 10 and 20; 13 between 20 and 30; 3 between 30 and 40; 3 between 40 and 50; 1 between 50 and 60; 1 between 60 and 70. The lowest reading was 5 and the highest 68. Of the 51 cases, 47 were between 5 and 35, thus showing a marked lowering in 92.9 per cent of the cases. Add to this the higher but still subnormal values obtained in the series and we find 98.7 per cent of the cases definitely and decidedly lower than normal. The highest total acidity reading occurring in the cases of achlorhydria was 25.

The influence of syphilis on the gastric acidity was also observed. The Wassermann reaction was used as an indication of the presence or absence of the disease. Of the 32 cases of achlorhydria in the series, a Wassermann test was done upon 29. On 3 no record could be obtained. The Wassermann was positive in 11 and negative in 18 of the cases. Of the 16 cases of hypochlorhydria a Wassermann was done in 15. In 9 the test was positive and in 6 it was negative. One was not done. The combined figures for achlorhydria and hypochlorhydria showed that of the 47 cases, the Wassermann was positive in 20 and negative in 24. Of the 3 normal cases the Wassermann was positive in 2 and negative in 1. This shows that the factor of syphilitic infection was, most probably, of no great consequence.

In a study of this kind, one is beset by many difficulties. A search of the literature yields a scarcity of information, and most of that is to be found in the foreign literature. The value of the Ewald test meal and its limitations must be considered. The accepted values for free hydrochloric acid and total acidity vary greatly with the authority invoked. From a reference to several sources, the figures of 25 to 50 for free hydrochloric acid and 50 to 75 for the total acidity were accepted as standards for the comparison with results obtained in this work. The complexity of the task is further increased when one attempts to arrive at the normal incidence of achlorhydria and hypochlorhydria, in any given series in those apparently well in the general population. Black¹ quotes Evanston as having found 4 per cent of achlorhydria in normal university students. Dr. F. M. Johns in a personal communication presented me with the following figures. Forty-seven junior medical students were given an Ewald test meal. Gastric analysis revealed the following. Of the 47 analyses, there were 4 cases of achlorhydria, giving 8.5 per cent. There were 4 cases of hypochlorhydria in the series. Three of the cases were re-examined and given a histamine injection. They all responded with the presence of free hydrochloric acid. The fourth student refused to be re-examined.

At this point I wish to state that although I was not interested in studying the effect of histamine stimulation in this particular series, I nevertheless did 5 such tests. In all there had been no hydrochloric acid present following the Ewald test meal. Following the use of histamine, specimens collected for 1½ hours showed no free hydrochloric acid and no increase in the total acidity. I think it quite important to note that among these young and apparently normal medical students, the average free hydrochloric acid reading was 28.6. and the total acidity 59.1. The incidence of achlorhydria and hypochlorhydria at

the various age intervals is of the utmost importance. All investigators are agreed that with the advance in years there is a definite decrease in gastric acidity. In a series of 300 cases reported by Black,¹ 65 per cent of the cases of achlorhydria were above 45 years of age. Seidline¹ found subacidity in 40 per cent of working people above 50 years of age, and in old persons about 65 years he found anacidity in 67 per cent. Friedenwald² in 112 cases of achlorhydria found the age distribution to be 16.9 per cent in the third decade; 29.4 per cent in the fourth decade; 31.2 per cent in the fifth decade. It is also of importance to note the frequency of occurrence of lowered gastric acidity values in general diseases, other than those gastric or cardiac in nature. Beck³ states that in a series of 500 consecutive tests in general medical cases, he found free hydrochloric acid ranging from 0 to 20 in 25.4 per cent of the entire series and from 20 to 40 in 40 per cent. Black¹ found 300 or 10 per cent of achlorhydria cases in 3030 gastric analyses in general medical cases. He quotes Eggleston and Hurst as having found 10 per cent of achlorhydria in their cases. With these facts in mind one notes the findings in heart disease. Rhexuss⁴ quotes and verifies Hoffman as stating that in chronic myocardial insufficiency there is an interference with the secretory output of the stomach resulting in subacidity and anacidity. Heufler⁵ found no free hydrochloric acid in the largest percentage of cardiacs associated with valve lesions. Friedenwald⁵ in 25 decompensated cases found normal free hydrochloric acid in 5; diminished in 13; absent in 6. In 25 compensated cases, he reported 17 with normal free hydrochloric acid; two with diminished and 2 with absent acid. Valzah and Nisbet in 23 decompensated cases found normal free hydrochloric acid in 5; diminished in 13 and absent in 5. In 18 compensated cases they found no change.

I found 3 or 5.8 per cent of normals in my series as compared to 5 or 20.0 per cent in Friedenwald's and 5 or 21.7 per cent of Valzah and Nisbet's cases. In the cases with diminished acidity, I found 16 or 31.3 per cent of cases as compared with 6 or 24.0 per cent of Friedenwald's and 5 or 21.7 per cent of Valzah and Nisbet's. The sub-normal cases of Friedenwald amounted to 76.0 per cent and those of Valzah and Nisbet to 78.2 per cent. In my series it amounted to 94.1.

With the possible exception of 3 or 4 cases, mucus was present in all specimen obtained. In only 3 cases was visible blood noted. The possible advantage of the use of free hydrochloric acid in these cases of congestive heart failure for the relief of abdominal discomfort and distention is noted en passant. In conclusion, I wish to express my thanks and appreciation to Dr. F. M. Johns and to the internes on our service at Charity Hospital for their help and co-operation in the performance of the tests.

CONCLUSION

The statistics of this study prove conclusively that in congestive heart failure there is a definite increase in the number of cases of achlorhydria and hypochlorhydria, which in this study amounted to a combined total of 94.1 per cent and a lowering of the total acidity, which amounted to 98.7 per cent.

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DISCUSSION

Dr. J. Holmes Smith, Jr.: I believe that Dr. Robbins is serving a very good purpose in one way in bringing before us the subject of gastric conditions in heart disease. I do not believe the matter, while it is well known, has been sufficiently considered.

As for the question of gastric achylia in relation to heart failure, personally I am inclined to think that is what one would expect; with disturbance of the circulation and disorders of the gastro-intestinal tract naturally there is going to be some interference with the secretion of acid and the occurrence of various digestive symptoms.

As to the use of hydrochloric acid in the treatment of this condition, I have never given the matter any thought. We notice how rapidly, when our patient is treated with digitalis, the congestion ceases. I believe it would be interesting if Dr. Robbins would continue his investigation, repeating the examination when the period of decompensation is over, when the heart has compensated itself, and see what the gastric secretion is doing.

As stated before, this matter brought before us (the study of gastric symptoms in the presence of heart disease) is a very important one. Dr. Robbins has quoted Rehfuess to the effect that in the presence of congestion in heart conditions there is first of all an interference with the secretory output of the stomach due of course to the congestion. There are other things that go along with the heart failure, such as motor disturbance, alteration in bowel function, disturbance of kidney function, congestion of liver, etc., and I would like to suggest that Dr. Robbins continue his very interesting paper a little further and see what these patients are doing in practice when the heart is properly compensated.

Dr. I. L. Robbins (closing): In regard to these decompensation cases, or cases of congestive heart failure and what happens to the acid after they have become compensated. Our experience has been that in the cases that have lasted a long time, where the heart condition has continued over a period of several months, or the patient has had several attacks, they never get very much of a return of gastric acid; but in those cases that occur for the first time and are followed by compensation, we frequently find them producing a certain amount of hydrochloric acid—the amount, I am not at present in a position to state. The old chronic cases that lasted several weeks to a few months, or those that returned to the ward with a recurrence, did not seem to get a return of hydrochloric acid in the stomach contents.

OPHTHALMIC LIGHT THERAPY.*

By

CHAS. A. BAHN, M. D.,

NEW ORLEANS.

Light has been used at varying times in the treatment of disease since the days of Hippocrates. No serious study of its physiologic action or therapeutic possibilities was made however, until about twenty-five years ago when Finsen advocated its use in certain forms of tuberculosis. Photo-therapy has found another field of usefulness in the treatment of rickets, which is probably the fore-runner of numerous others.

The public and medical profession are at present rather deeply interested in this subject, which unfortunately creates a psychological time for the exploitation of equipment, a great part of which will do little good and some, in inexperienced hands may do actual harm.

From this varied experimentation however, good will probably directly or indirectly result.

The sense of vision is produced by retinal contact with wave lengths varying from 4,000 to 7,000 Angstrom units,† A. U., which compose the middle of about seven octaves constituting that form of energy called light. The longer wave lengths ranging from 7,000 to 20,000 A. U., are called infra red because they begin at the red end of the spectrum. They are increasingly and approximately equally absorbed by both the cornea and the lens. The shorter wave lengths, which are called ultra violet, and range from 2,000 to 4,000 A. U., begin at the violet end of the spectrum and they are apparently somewhat more largely absorbed by the cornea.

Being intended primarily for the general physician as an abstract of progress in a new and interesting field, statements involving only technical accuracy have been avoided.

Unless excessive, visible light has practically no effect on the anterior eyeball, passing through its various media unobstructed. It is the obstruction of absorption of ultra violet or infra red light that causes an energy transference capable of therapeutic applications.

The longer wave lengths of infra red light upon contact with living tissue are generally speaking, transferred into heat and possibly have other effects with which we are not yet familiar. Following excessive, or too long exposure, cell death with coagulation, and accompanied by a vasodilatation and exudation, result.

Ultra violet light has quite a different effect on living tissues, though in excess also produces cell death. Sunburn is due essentially to ultra violet light and not to heat, forming a simple illustration of ultra violet therapy. Applied to the skin, it increases the activity especially of the epithelial cell life to a certain point beyond which degeneration begins; stimulates proliferation of pigment cells, the out-pouring of fluids from the capillaries, and the production of new chemical substances in the tissues. These are apparently involved in well being and the maintenance of a reasonable immunity to certain diseases. The fact that our blood is red, means that the red part of spectral light is reflected and the remainder largely absorbed. In this absorption of especially the short waves or ultra violet light, some find a simple explanation of a physiologic necessity of sufficient bodily exposure to sunlight which is rich in ultra violet lengths. Children obtaining insufficient bodily sunlight are more subject especially to rickets and phlyctenular disease and are often greatly improved when this deficiency is rectified. Adults require sufficient bodily sunlight probably almost as much as chil-

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

†The Angstrom unit, A. U., used in the measurement of light waves in 1/250,000,000 inch.

dren, and most of us who lead indoor lives would probably feel better if our entire bodies received at least an hour of sunlight daily. Because our faces and necks are tanned, we conclude that further light exposure to our bodies is unnecessary.

Bodily light baths are more generally used in Europe and will probably be more widely adopted by us. Sunlight unobstructed by glass is in my opinion, and apparently that of most authors, equal for general photo-therapy to any artificial light which has yet been made, and where available and practical, is in the large majority of cases, the more desirable. In this climate its application is extremely simple. The patient lies in the sunshine with as little clothing as possible, for approximately twenty minutes the first day and increasing five or ten minutes daily, alternating the other half of the body each second day until the skin has a slight tan, or until malaise, depression or other symptoms of overdosage result. A rest period of two weeks is taken and the process repeated if advisable. Especially in under nourished and under weight children where the organic disease offers no contra indications, light baths under the supervision of a physician often form an important auxilliary to other treatment. Diabetes, certain skin conditions, and idiocyncrasy are mentioned in literature as possible contra indications.

Ultra violet light produces in the cornea an increased life cycle of especially the epithelial cells, vaso-dilatation, the outpouring of fluids which have an altered destruction of superficial bacteria. The character, increased eosinophilia and the presence of certain analin stains such as fluorescein and congo red act as sensitizing agents materially increasing its bacterial effect. The latent period of about hours seen in electric conjunctivitis is apparently due to the premature death of the anterior corneal epithelial cells illustrating the effect of slight over dosage. In still greater amount, its action more closely resembles that of other forms of cauterization.

Based upon known physiologic action, the local use of ultra violet therapy most logically applied in the destruction of micro-organisms involving only the superficial layers, and in the stimulation or the slight cauterization of superficial tissue in the conjunctiva, sclera and cornea, with resulting increased immunity.

Ophthalmic literature records an occasional brilliant result following light treatment in all sorts of eye diseases which cannot yet be explained. These must be varified by intelligent experimentation before general adoption.

Infra red therapy is employed essentially as an analgesic in practically all inflammatory ocular painful affections, and if patents' statements are to be accepted, is apparently the most comforting form of heat applications used in ophthalmology. Its therapeutic value however, in the light of our present knowledge is practically nil.

The lamp that has been most frequently used in ophthalmic ultra violet therapy, is the irradiation lamp of Birch-Hirschfeld, which has been employed in our series of 106 cases. Being of the arc type, both long and short wave lengths in profusion are transmitted, requiring filters which will absorb in a great part, all the wave lengths down to around 3,000 A. U. which are used for therapeutic purposes. The uviol glass filter transmits practically only light down to 3,150 and with an additional $\frac{1}{2}$ per cent copper sulphate solution in a quartz cell, this is reduced to 2,800. With both filters the total amount of light transmitted is rather small and hardly sufficient for reasonably rapid therapeutic results. We have therefore used the uviol filter alone, which we think advisable. A container and lens system of quartz, or a special type of glass which will transmit ultra violet light is necessary, ordinary glass absorbing most of the short wave lengths.

We use an average five to ten minute exposure, the light condensed on the eye by an assistant if necessary. In but two of

our cases has the patient complained of slight discomfort following this treatment.

Among the other lamps used for ocular ultra violet therapy, the Kromayer lamp and that of Duke Elder both of which are mercury vapor arc lamps, are most frequently mentioned in the literature. The Curay, which is a mercury vapor incandescent lamp using a special form of glass globe which absorbs relatively less ultra violet light, is used by some Authors. In the next several years there will probably be marked improvements in our filtering system of light which will facilitate the use of specific wave lengths with greater ease and simplicity.

In our series of six patients treated with infra red light, we have used fifteen to

thirty minutes with the Zoa light. The applications are given daily or as needed, the lamp being about two feet from the face, and the eye lids closed.

In the summary of our series of 106 cases treated by this method, the results given are based upon changes in subjective symptoms and objective symptoms compared with an imaginary similar case similarly treated except with light treatment omitted. No two eyes being exactly alike, it is rather difficult to evaluate with reasonable accuracy the effect that light treatment plays in the patient's improvement, especially as it was used only as an auxiliary in connection with more established treatment methods.

In affections of the lids, local phototherapy has been used apparently with

	Total	Much Improved	Improved	Not Improved
Suppurative chalazion	1		1	
Hordeolum.....	4		4	
Blepharo-conjunctivitis	2		1	1
Trachoma.....	6		2	4
Keratitis, ulcerative, herpetiform	29	1	21	7
Keratitis, ulcerative re-current, traumatic	1			1
Keratitis, ulcerative, marginal.....	2		2	
Keratitis, ulcerative, infected	3	2		1
Keratitis, ulcerative, infected, incipient following foreign body.....	17		14	3
Keratitis, interstitial	4			4
Corneal blood stain	2			2
Corneal opacities superficial and deep	3		2	1
Episcleritis.....	4			4
Scleral wound perforating with beginning infection	1		1	
Irido-cyclitis (varying types, stages and causes)	9		5	4
Glaucoma, primary.....	5		1	4
Miscellaneous including: Secondary retinal detachment, acute and chronic conjunctivitis, nuclear and cortical lens opacities	13		6	7
	106	8	60	43

Summary of 106 ultra violet treatments.

benefit in herpetic and tuberculous disease, eczematous affections, chalazia, hordeola and as a preventative of infection extension following injury.

In the conjunctiva it has been more frequently used in blepharo-conjunctivitis, trachoma, vernal conjunctivitis, and phlyctenular disease, especially involving the limbus.

In affections of the sclera, especially of tuberculous origin, ultra violet therapy seems to be regarded as a valuable adjunct to other treatment.

In the herpetiform group of corneal affections characterized by variable loss of substance, delayed healing, diminished sensitiveness and negative explanatory bacterial findings and especially in the incipient stages, this form of therapy apparently finds its most successful application. The use of a properly prepared 2 per cent fluorescein or 1 per cent congo red solution apparently accentuates the intensity of its effect. Based upon our experience I would unquestionably desire this form of therapy used upon me, especially if I had herpetic disease or beginning serpiginous ulcer.

In pneumococcal ulcers, I do not believe that we are justified in omitting any or all of the other methods of treatment at our command which might hasten recovery, simply because ultra violet therapy is being used. In other words, I think that ultra violet therapy is only an adjunct to other treatment.

In the dystrophic group of corneal affections, photo-therapy also finds a logical application and has been recorded in the literature rather favorably in the treatment of these otherwise progressive conditions. The phlyctenular group of corneal affections apparently offer a more fertile field for general than local photo-therapy, which however, is worthy of trial.

In affections of the lens, excessive dosage far beyond that used for ordinary therapeutic purposes is capable of producing

opacities of various sorts. The amount of ultra violet light necessary to produce lens opacities in human beings apparently varies widely, but only far in excess of any reasonable therapeutic application.

Infra red light however, can produce lens opacities rapidly, if excessively used both in man as is illustrated in glass blowers, and in animals as is repeatedly artificially produced in the laboratory. Whether or not either can be practically used in the artificial ripening of lens opacities is worthy of investigation. In the prevention of lens opacities however, neither infra red nor ultra violet light has any sound reason for being used.

The application of ultra violet therapy to the posterior eye varies greatly from the anterior half because of light absorption through the cornea and lens. With our present equipment, so little ultra violet light, reaches the posterior eye after therapeutic dosages, that its use hardly seems worthy even of experimental trial. Some method of overcoming these difficulties will probably be devised in the near future.

In the fundus, light in excess of that which can be used by the choroid for visual purposes, is probably transformed into heat. The blindness produced by viewing eclipses or other intense light is apparently due to the condensation of an enormous amount of visible light producing an ordinary heat burn.

I am especially indebted to Dr. S. R. Gifford for use of slides and for the many ideas obtained from his excellent work, which with that of Birch-Hirschfield and Duke Elder, largely record our progress in ophthalmic photo-therapy to this time.

CONCLUSIONS.

1. Bodily light baths under reasonable supervision are an important adjunct to other treatment in numerous bodily diseases which directly or indirectly affect the eye and are especially indicated in children with deficiency of bodily development and

nutrition. They are also of value in adults leading in-door lives, receiving insufficient sunlight, and showing excessive fatigue or other evidence of bodily disfunction.

2. Sunlight for this purpose is at least the equal in therapeutic value of any artificial light yet devised and generally speaking is preferable.

3. Ultra violet light in therapeutic doses apparently increases cell activity, stimulates pigment formation, destroys bacteria, increases lymphatic circulation, and produces substances which increase bodily immunity.

4. Ultra violet ocular therapy is a valuable adjunct to other treatment, especially in certain types of superficial diseases involving infection or delayed cell reproduction and recovery, such as the herpetiform affections and dystrophies.

5. The most promising field for ultra violet ocular therapy apparently lies in the prevention or arrest of infected ulcers and herpes and in its early use following injuries showing the first signs of delayed healing.

6. The use of analin dyes in ulcerative affections and powered dionin in non-ulcerative affections immediately prior to ultra violet treatment, apparently markedly accentuate its therapeutic effect.

7. Especially in pneumococcal corneal ulcers, light treatment alone cannot be depended upon sufficiently to justify its exclusive use, but should be used with other treatments.

8. The Birch-Hirschfeld irradiation apparatus has proved satisfactory used with uviole filter alone.

9. Infra red ocular therapy is we believe, the most pleasant form of heat application and is an excellent analgesic in all painful and inflammatory ocular affections.

DISCUSSION.

Alva G. Thomas (New Orleans): I have observed and treated with the author many of the cases mentioned and in general concur in his conclusions.

In the treatment of varying types of painful, inflammatory affections, especially corneal ulcers, irido-cyclitis and certain traumatic conditions, the use of infra red therapy convinces me that it has considerable merit in ocular therapy. It is a valuable aid for the relief of ocular pain. Let us not forget that the relief of pain is an important step toward general well being, which indirectly exerts a powerful influence in ocular recovery, irrespective of cause.

I have been interested in the application of ultra violet light especially in cases of herpetiform keratitis. In the prevention and arrest of this and other corneal infections, is apparently the field of greatest usefulness for local ultra violet therapy.

Especially in cases of herpetic affections it is sometimes difficult to judge the effect of any therapeutic measure because of the great variation of intensity in the sometimes multiple causative factors. We can estimate only roughly the degree of involvement and injury of the trophic innervation of the cornea by the objective findings, and by the general constitutional reactions of infection, or poisoning.

The healing of the corneal affection may be prolonged, due to our failure to locate the dominant causes or to the patient's reluctance in undergoing the necessary surgical treatment. This occurred in two of our cases where roentgen-ray revealed dental infection. Only upon removal of the infected teeth, did healing readily occur.

The effect of mental disturbance and nervous shock as provoked, for example, by any misfortune in life may aggravate ocular affections of this sort, as shown in two of our recent cases.

The general well being of the patient including living habits, diet, rest, and exercise, the abuse of especially tobacco, must also be considered in the evaluation of any ocular therapeutic measure.

In a recent case with extensive detachment of the corneal epithelium, after remaining unchanged for two months, the entire affected epithelium was removed surgically and within forty-eight hours was completely replaced. I find that Dr. S. R. Gifford mentions two similar cases in which ultra violet therapy was ineffective, his final treatment being abrasion and bandage.

On the whole I believe that general and local light therapy is a most useful adjunct to other treatment in ophthalmology and will find an increasing field of application.

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INDUSTRIAL MEDICINE.*

JAS. M. ADAMS, M. D.,

Baton Rouge, La.

While the spectre of "state medicine" haunts our profession and organized medicine concerns itself with medical service by lay organizations, contract practice and other deviations from the established form of private practice, it seems pertinent to define the aim and scope of industrial medicine. Some of their problems have been presented to you by industrial surgeons, but there has been no discussion here of the physician in industry.

Since the passing of the guilds there have been sporadic experiments by employers in furnishing medical service to their employees. In 1817 an English traveler in Ireland wrote of a woolen mill at Kilkenny, Ireland, that "to prove against or to remedy sickness or bodily injury from accident, the services of an eminent physician or surgeon are engaged; and an appropriate infirmary is about to be built on an appropriate and healthy situation." But it took the world war with the necessity for high speed production and the shortage of labor to emphasize the importance of conservation of manpower, and it is only within the past fifteen years that Industrial Medicine has reached its present development.

NEED

The Modern Hospital asks, "Who is responsible for the health of the worker in industry—the state, the employee or the employer?" The socialist answers that it is the duty of the state; the individualist that the employee must care for himself; but there is a noticeable tendency for industry itself to shoulder the burden. The state made the first move with the passage of workmen's compensation laws, and is continuing to make laws relative to the preservation of the worker's health. But employers with vision and corporations with souls have gone far beyond the demands of the state. It matters not that compensation laws may have been the guiding hands that pointed the way. Industry has realized the benefits to employer, employee and the community and is daily increasing the scope of its preventive work, until today industrial medicine is a power in health preservation and life extension. The time is coming when state medicine may be forestalled by efficient plant medicine.

A few years ago three-fourths of the population of our country were engaged in agriculture with large industries confined to a small area. Today factories are scattered throughout the country and three-fourths of the population are engaged in industry with a constant trend of the population to urban centers. This grouping of individuals gives industry an exceptional opportunity for preventive work. Industrial workers have the same health problems as those engaged in other pursuits, but they have additional risks. Industrial medicine is not intended to supplant, but to supplement public health work. Present day industrial methods with high speed machinery and quantity production require working under stress and pressure. Larger units increase crowding. New methods utilizing chemical compounds which have deleterious effects on the worker are being frequently introduced in manufacturing processes.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

The cost of sickness to industry is tremendous. An average of five per cent of the workers are sick at all times, with an average of nine days per year lost for each workman. Cheney Bros. estimate the cost of sickness to the employer at \$60.00 per year for each employee.

Restriction of immigration threatens to cause a shortage of labor and emphasizes the necessity for conserving our labor supply. The day of the hobo workman is passing. Prolonging the lives and usefulness of old and experienced employees is more important to the employer than saving time lost. A study by the Metropolitan Life Insurance Company shows that the death rates for white males engaged in industry in each age group from twenty-five to sixty-four are 25 per cent higher than in the corresponding groups in the U. S. registration area.

Ordinarily 25 per cent of the employees are reached by the industrial medical department each month. In the industry I serve, we render medical service to every employee an average of once each month.

AIM

The American Association of Industrial Physicians and Surgeons has resolved that "It is not the reasonable and proper responsibility of an industrial physician to treat cases of a serious or incapacitating illness of non-industrial origin except under unusual circumstances. Minor disabilities of non-industrial origin, if not incapacitating, may well be treated at the plant dispensary." Let me emphasize that industrial medicine does not contemplate the treatment of disabling illness. It is true that some employers do furnish complete medical and surgical service to their employees, but the principle is paternalistic and therefore industrially unsound. It is a proper function of industry only where adequate medical service is not otherwise available. When included in industrial medical service it is usually at the expense of the true mission of industrial medicine.

The aim of industry is production and the work of the medical department, as of all other departments, is to that end. Its contribution to increased production is the yardstick by which its success is measured. But industry today has so much concern with the welfare of the worker that medical service, which is the basis of all welfare work, has other justification for its existence. It has a humanitarian as well as an economic duty and must not be commercialized. To accomplish its purpose it seeks to reduce the loss of time from work arising from sickness and accidental injury by prevention and by shortening the disability period; to increase the efficiency of the worker and add to his contentment by improving his health; to prolong the life and usefulness of old and experienced employees; and by these measures to reduce the cost of employing and training new and inexperienced workers. The amount of disability from sickness in industry is ten times greater than from accidents, so the prevention of illness is the major problem of the industrial physician.

SCOPE

The functions of the plant medical department are medical, surgical, hygienic and sanitary. The medical service contemplates the treatment of minor and incipient disease and co-operation with the physician attending those seriously ill.

Good operative surgery represents only one-fourth of what may be considered as adequate industrial accident service. Of equal importance are the prevention of accidents, efficient first-aid treatment and the after care of the patient. Prevention of accidents must always be a medical duty even where a safety department operates independently of the medical department, and the industrial physician must be familiar with the accident hazards in his plant. Thirty-five per cent of all accidents in industry are due to physical defects in employees, such as defective eye-sight, hypertension, heart disease, and epilepsy, and these predisposing causes can be elim-

inated by correction of defects and placement in suitable employment. The importance of efficient first-aid to the injured needs no emphasis. Surgical treatment is not complete until the patient attains the maximum restoration of function, is re-educated and placed in suitable employment.

Hygienic measures are aimed at the early recognition and prevention of diseases, education in health preservation, and maintenance of a healthful working environment.

Sanitary conditions must be maintained in lunch rooms, work rooms, toilets and wash rooms and good housekeeping methods insisted upon.

The work of the industrial medical department may be divided into treatments, physical examinations, laboratory examinations, dental service, visiting service, inspections, educational measures, transportation, record keeping, administrative duties and consultation service.

First-aid treatment of accidental injuries was the original purpose of the plant physician. Selective treatment of minor injuries and ambulatory cases is given. Confining injuries and those requiring surgery should be treated by an industrial surgeon. Physical and other therapy should be administered to restore function after injuries, and all permanent disabilities must be followed up until the maximum of improvement has been secured.

Medical treatment is given for minor illness and home injuries, for medical emergencies and for occupational diseases. Employees are urged to visit the plant dispensary freely. Early manifestations of serious diseases are recognized and the proper means for their prevention instituted. The patients treated are those that would otherwise usually treat themselves, often with patent medicines, but with the services of a physician available this harmful practice is discouraged. Medical first-aid is as important as surgical. Occasion-

ally it may be necessary to treat certain diseases. In the industry I serve we have found it advisable to treat employees having malaria in order to eliminate the carriers and thereby reduce the malaria incidence. Many employers, realizing that it is impossible for the average workman to finance the proper treatment of tuberculosis, are furnishing their tuberculous employees with sanatorium treatment in recognized institutions.

Each applicant for employment should have a physical examination. Employees are protected thereby from exposure to infectious diseases from which the applicant might be suffering; the applicant is prevented from engaging in work for which he is not physically qualified; and the industry is protected from false compensation claims for a previously existing disability.

Periodic health examinations reveal numerous defects which may be corrected with a consequent improvement in health and prolongation of life. Disabilities are found which make the usual occupation of the employee a menace to his health and by changing his work the danger is removed. Transfers of men from one kind of work to another should first have the approval of the physician. Men returning to work from absence due to illness or injury must be examined to determine their fitness to resume work. Those exposed to or engaged in handling industrial poisons must be examined frequently to detect early symptoms of intoxication. Food handlers require frequent examination for communicable diseases.

The importance of focal infections makes the service of a dentist indispensable. He examines applicants for employment, makes periodic examinations of the employees, gives prophylactic and emergency treatments, gives advice for permanent treatment and follows up the cases to see that defects are corrected, reports on patients referred by the physician and treats industrial dental injuries.

A clinical laboratory should be maintained for use in physical examinations, for diagnosis and for the early detection of poisoning. A roentgen-ray laboratory is a necessity in treating injuries and an invaluable aid in diagnosis.

There is no activity of the plant medical department that does more to promote a spirit of loyalty to the employer than the service of the visiting nurse. All sickness is accidental, and most families are ignorant of even the simplest measures for the comfort and relief of the patient. Every employee absent on account of sickness should be visited at once by the nurse. If the services of a physician are necessary, she advises that one be called. She instructs the wife or mother in the rudiments of nursing and in the measures necessary for the protection of the other members of the family. She has a wonderful opportunity for imparting health information and should miss no chance to correct any unhygienic condition found in the home. Her influence is doubled if her service is extended to the families of employees. She must never be used as a detective to trap malingerers.

Frequent inspections are necessary to maintain sanitary conditions in toilets and wash rooms. The effect of clean quarters reaches back to the home, for the employee who becomes used to cleanly facilities will provide them in his home. Close supervision should be maintained over the lunch rooms including examination of the food handlers, sanitary methods and selection and preparation of food. The services of a dietitian are desirable.

Proper ventilation of work rooms is an important preventive measure. Seating and lighting arrangements have an influence on fatigue and efficiency. Dust and industrial poison hazards must be reduced and the employees exposed to such hazards protected. The water supply must be guarded. Good housekeeping is an important and safety factor.

Education of the employee begins with his physical examination. He is instructed in the correction of defects. He is told to report early to the dispensary in case of illness or injury. When he does come, he is in a receptive mood, and a word from the nurse or the doctor on prevention is seed sown in fertile ground. The visiting nurse sees him in his home and gives him another message. Simple articles on health subjects should be used in the plant paper. Bulletins and moving pictures have their appeal. Employee organizations may be utilized to disseminate information. Training in first aid is a factor in the prevention of accidents, a means of saving life, suffering and added injury both in the plant and out, and is an asset to the community. Recreation and athletic activities should be encouraged and directed, and employee welfare organizations should be actively supported.

Where the plant covers a large area, means of quick transportation should be provided from the scene of an accident to the dispensary, and an ambulance should be maintained to carry the severely injured to the hospital. Prompt handling and transportation of an injured employee create a feeling of security in the worker and increase his confidence in the medical department. The ambulance is also used to transport men becoming acutely ill while at work.

Records are as important to the industrial physician as they are to a hospital. Every treatment and every contact with an employee, even of the most trivial nature, should be recorded. A fairly accurate measure of an employee's physical status is presented in records of the physical examinations, treatments of injuries, minor diseases and details of disabling illness covering the period of his service. Often trivial injuries, non-industrial injuries or illness are bases of claims for compensation and accurate records safeguard the employer.

Administrative duties take up a large part of the industrial physician's time. He must direct the personnel of the medical department which in a plant employing several thousand workmen will consist of one or more physicians, a dentist, one or more visiting nurses, a hospital nurse with the necessary number of assistants, a roentgen-ray, laboratory and physio-therapy technician, one or more clerks, a sanitary squad and a varying number of consultants. The department must be operated as economically as is consistent with efficiency. The fact that an industry is capitalized for millions of dollars is no excuse for extravagance. Close contact and cooperation must be maintained with all departments, especially the employment and personnel departments. The administration of employee organizations such as benefit societies call for his assistance. Some industries provide insurance for their employees, which adds to the administrative duties.

Like the general practitioner the industrial physician must have knowledge of all the manifestations of diseases, but like the general practitioner he can not be a specialist in all branches. So he should have a number of consultants on his staff varying with the needs of his industry. Unless he does his own surgery, an industrial surgeon is a necessity. The services of a consulting ophthalmologist should be available for the treatment of severe eye injuries, for determination of visual defects and for prescribing glasses. Many a mediocre workman has been transformed into a valued employee by being fitted with glasses. If much roentgen-ray work is done, a consulting roentgenologist is desirable. There are many workers of sub-standard mentality or with emotional disorders that need the help of a psychiatrist. By advice, job selection and correction of environmental obstacles, the value of many of such men to the industry is increased, and sources of labor troubles are eliminated.

The industrial physician must himself serve as consultant in diagnosis to any sick employee and when requested assist in or be present at operations on employees or members of their families. If the worker has confidence in the industrial physician he will go to work in a more cheerful frame of mind if he knows the physician is present at an operation on one of his family.

The medical department described is suitable for industries with several thousand employees. The same service can and should be furnished to even the smallest plants. This is being done in many places by industrial clinics organized along the same lines but serving many instead of one industry.

QUALIFICATIONS NECESSARY FOR THE INDUSTRIAL PHYSICIAN.

The Conference Board of Physicians in Industry has defined the industrial physician as "one who applies the principles of modern medicine and surgery to the industrial worker, sick or well, supplementing the remedial agencies of medicine by the sound application of hygiene, sanitation and accident prevention: and who in addition has an adequate and cooperative appreciation of the social, economic and administrative problems and responsibilities of industry and its relation to society." He must be well grounded in the fundamentals of medicine and surgery, and should have the background of experience in general practice so necessary for the specialist in any line. He must have executive and administrative ability, as his authority should be equal to that of the superintendent of a department. It is advantageous to have all personnel work including employment, safety, insurance, compensation and medical in one department headed by the physician, with authority to make decisions subject only to the approval of the head of the industry. The welfare of the employees should be his constant aim and he should be qualified to take a leading part in their activities. He must inspire confidence in the workmen and hold the confidence of the

foremen, superintendents and officials. He must be unprejudiced and impartial and be able to plead the worker's cause when he is right, and to give him the benefit of any reasonable doubt. He can best serve his organization by having the best interests of the employee foremost in his thoughts.

He must have initiative and vision. Doing only the work that comes to his hand will not be enough. He must find work for his hand to do. A knowledge of the social and economic condition of the employee is essential in improving his health and efficiency. He must know the plant and the personnel. He must be an educator, for education is his strongest weapon. His relations with the employees should be as strictly confidential as if they were private patients, and his reports on their physical condition should be in general terms and should not include diagnoses.

RELATIONS WITH THE PRIVATE PRACTITIONER.

The industrial physician should be a member of and take an active part in his local medical society. If he is to be successful it is necessary that he have the good will, respect and confidence of his professional associates. He should maintain at least an associate membership on the staff of one or more hospitals. In contrast to other specialists, he refers cases to the general practitioner or to specialists instead of having cases referred to him. His activities increase the work of his professional associates in the same way that public health work should. Patients are referred by him for disabilities of which they are ignorant, and many taking home remedies or patent medicines are advised to consult their doctor. Having the advice of a physician available encourages the employee to consult his physician earlier and more often for the members of his family.

He must carefully observe the professional amenities. In referring cases to specialists he should name several rather than one man. Delicate situations arise which require tactful handling when he

does not agree with the attending physician in the treatment of a patient.

ACCOMPLISHMENTS.

The industrial medical department has reduced absenteeism from sickness and injury twenty-five to fifty per cent. The National Cash Register Company, with a competent health service, has a sick rate of one and one-half days, per employee per year against an average for the country of nine days per year.

Infections from injuries have been practically eliminated. Permanent disabilities from injury have been greatly reduced. Premiums for compensation insurance and the cost of compensation have been lowered. The employer has been saved from false claims for compensation.

Unhealthful working conditions and neglect of injured workmen have been eliminated as causes for strikes. A better feeling of the employee for the employer has been engendered, with a consequent increase in efficiency.

Preservation of the health and prolonging the lives of workers have been accomplished. The discovery and correction of a serious defect in a single executive may be worth much more than the total cost of the medical service.

Labor turnover, which has been estimated to cost \$35.00 for each new employee, has been reduced to a minimum. Much time has been saved by dressing injuries and treating minor illness at the plant which would otherwise necessitate absence from work for their treatment.

OPPORTUNITIES FOR STUDIES.

Opportunities for research are limited only by the time that may be given to them. The following are a few studies suggested by the work of our medical department: a comparison of blood pressures in white and colored males, the cure of malaria, the prevalence of syphilis as shown by the Butler precipitation test in apparently healthy

negro males, the prophylaxis of respiratory diseases with vaccines, a routine treatment for aborting "colds", the influence of working conditions in the etiology of "colds", the alkaline ash diet for hypertension and causes of low back pain.

An industrial medical department will have records of many complete examinations of apparently healthy individuals, morbidity statistics of its group of employees covering the period of their employment, and much other statistical data not available elsewhere.

Relief of suffering, saving of lives, the discovery of new methods for combating illness are the doctor's compensation. No less satisfying are the prevention of disease and the extension of human life, which are the rewards of the industrial physician. The practice of industrial medicine is worthy of the best talent in our profession.

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DISCUSSION

Dr. W. Alvin Love (New Orleans): I am sure Dr. Adams has contributed something which well belongs in the archives of this anniversary, and he is sounding a note for considering something that has to be eventually about as sweeping as the Workmen's Compensation Act is today.

Medical men are always poor advertisers. That is why the surgeons get the big fees and medical men get the small ones.

The workman has been taken care of from the standpoint of his injuries. The question as to what should be done with his occupational illnesses has not been settled yet except in such plants as employ industrial physicians. The courts have ruled that industrial illnesses have no place in the Workmen's Compensation Act.

It is only a question of time until the plants, not only big ones but small ones, are going to realize the necessity of doing what Dr. Adams' plant is doing for their workmen, and the only thing we have to worry ourselves about is whether this thing shall be handled by the plants and their physicians, or whether it will be taken up by the bugbear of state medicine.

I want to say that I received a bit of valuable information from the recountal, just how to go about these things. While just a few of us have the opportunity to put these into effect, it shows us that there is a distinct relationship between an industrial physician as a specialist and general practitioner. I believe Dr. Adams has sounded one point which men doing contract work should remember; that the contract physician or the contract surgeon owes a certain consideration to men in general practice, and that he should be considered as a man who is sending cases to the general practitioner rather than the man who is taking cases away from the general practitioner.

Dr. T. J. Perkins (Jackson): I am familiar with the work Dr. Adams has done, and I should like to know if there has been any attempt to evaluate the mental capacity of men that come into their employ to do certain types of work.

It occurs to me that it would be very valuable to any industrial plant that employs a very great many men to have an environmental test to learn what his social, educational and industrial opportunities have been, and what he has done with the opportunities he has had. I believe a test of that sort would be invaluable to the large industrial plants because they are apt to place men here and there, and their mental qualifications might not be fitted to the position they hold. I should like to ask Dr. Adams if they have ever taken up that branch of the subject?

Dr. Adams, Baton Rouge (closing): I have nothing to add except in reply to Dr. Perkins' question with regard to the mental classification of the men on the job.

We are only doing that in a limited way, and in the way that the general practitioner practices psychology. As I mentioned in my paper, I think the services of a psychiatrist are very important in the proper conduct of industrial work.

THE RELATIONSHIP OF FEEBLE-MINDEDNESS TO CRIMINALITY.

H. R. UNSWORTH, M. D.,

NEW ORLEANS.

Feeble-mindedness is a condition characterized by the lack of normal development of the intelligence, resulting from either injuries received before birth, at birth, or during the first six years of life, or from the imperfect development of the brain structures. Feeble-mindedness, therefore, always appears in early childhood.

The Louisiana State Board of Health, of which Dr. Jos. O'Hara is the President, has very recently declared its interest in the feeble-minded child by establishing a department of Mental Hygiene, of which I am Director. It is our hope to justify the existence of this very necessary adjunct to public health work, and to assist in identifying, classifying, and handling the cases of feeble-mindedness throughout the State of Louisiana, and thereby not only correcting the waste in human derelicts but also to prevent the tremendous economical burden thereby incumbent on the State. This can be done by the prevention of crimes that are by far a part and parcel of all expressed deficient mentality.

There is no question but what many cases of feeble-mindedness go unrecognized, and it is only after an atrocious crime that the question of a criminal's mental status is sought. This not only creates disrespect for expert testimony, but it also works an injustice both to the legal procedure, the criminal, and the victim of such a situation. It is our hope to recognize these early, so that the criminalistic tendencies of these people be directed into more useful fields industrially speaking.

The more I see of habitual criminals and murders, the more profound I feel that the vast majority are unfortunates, who are stamped with decided physical and mental

stigmata of various degrees of feeble-mindedness; though, I admit there are certain emotional reactions in normal individuals that end in criminal deeds. I, however, believe that as we go along in our studies of the criminal, we will find that we need larger and a greater number of psychopathic hospitals instead of immense prisons. It might be surprising to some of you to know that in many instances an individual of retarded mental development bears no physical evidence of his psychic contents, and again it is surprising to find there are certain types of feeble-minded individuals who have essentially a normal intellect as revealed by the recent intelligence test, but who are moral and social imbeciles.

There are three types of mental developments: the intelligent, the social, and the mechanical. It is easy to recognize the vast possibility of misjudging an individual from the viewpoint of his academic knowledge only, and neglecting to ascertain the social reactions, for it is the anti-social type of feeble-mindedness that fills the ranks of criminals.

I wish to convey to this body that a feeble-minded person is not necessarily a criminal, nor likely to be, it depends tremendously on the extent of his social feeble-mindedness, so to speak.

The constructive part of this program as undertaken by the Louisiana State Board of Health is, first, to be sure that an individual is feeble-minded. I have found in many instances that where a child was backward in school, with reports of minor misbehavior reactions that he was considered feeble-minded, but on examination was found to be a victim of organic nervous disease. It is easy to understand that when we have a retarded mental development, due to a definite organic change, it is possible in numerous instances to correct this defect, and re-establish the child in normal life. Secondly, to understand from the beginning that if a child is feeble-minded though he has shown no gross or

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major misbehavior, that he may be adjusted to some minor industrial occupation, which would not only serve as a very definite constructive program, but would make the patient self-supporting. Thirdly, if the outstanding feature is that of anti-socialism, criminalistic tendencies or expressions, they should immediately place that child under the protection of an institution. This automatically prevents any possible act of violence, with the incurrence of the expense of legal procedure to the state, and finally, the recognition that the individual has always been a mentally defective person and therefore not responsible for his acts.

Long before a method of mental measurement by tests was discovered, an English commission, after studying the problems of feeble-mindedness, defined a feeble-minded person as one who on account of mental defect occurring at, or near birth, is incapable of competing on equal terms with his fellows in the station of life to which he is born. It is evident from the above definition, that failure in social adjustment was a determining factor as to feeble-mindedness. Of recent years, there have been developed standard tests for measuring the degree of intelligence of individuals of all mental levels; and those falling below 75 I. Q. are automatically classed as feeble-minded. This appears to rather lessen the significance of social maladjustment, which after all, is the outstanding characteristic of the criminally inclined feeble-minded individuals. It is my opinion that it is this type of person the law, both legally and economically, is interested in, for the fact that acts committed by this type of persons rock the social structure under which a normal community exists, thereby jeopardizing the security of individuals and states.

The first anti-social act of a juvenile personality often seems so mild as to appear none other than a problem of misbehavior, and appears on the surface to be an insignificant response to bad environment. But

as a rule if a thorough investigation is made both from the social and mental viewpoint it will be found that the child is a feeble-minded problem.

I contend that normal misbehavior is differentiated from pathological behavior by the simple fact that, if a child is properly corrected for its anti-social reactions, it will soon correct these. On the other hand, if the misbehavior is repeated in spite of the fact that punishment has been intelligently administered the result of profound study usually reveals a substantial mentality. It is from this point of view that I take issue with the behaviorist and the psychologist, for the simple fact, that their attempts at correction usually necessitate prolonged observation and give too much time for the development of fixed behavior reactions, also opportunity for some criminal deed to be done before the child is recognized as a case of feeble-mindedness.

I feel that the efforts of our State should be confined to the definitely abnormal child, and not to the mal-adjusted social patient, who has a normal mentality and is merely a victim of environment and poor parental supervision. I further believe that a necessary requisite of social clinics, dealing with children in their formative years, whose acts and reactions are more or less automatic should be to have directors and persons of authority informed along lines of normal and abnormal behavior as well as biologists and physicians and whenever possible parents.

Though I am unable to quote any reliable statistics regarding the relationship between the population of penal institutes and the number of feeble-minded persons in them, yet, it has been my observation that the constant offenders of persons and property, are usually of the psychopathic type. This is a particularly broad and indefinable classification, for the reason that many of these people cannot be definitely considered feeble-minded, as revealed by our standard intelligence tests. However, a detailed

social history will usually reveal a definite pathological behavior pattern from infancy, and this is the type to which I refer as the socially feeble-minded. In going through the case histories at St. Elizabeth's Hospital for the Insane, I find in the Howard Hall Service, which is for the criminally insane, that the early behavior problems are a striking feature, and the physical stigmata of degeneracy is obvious in most instances.

In concluding this paper, though not accurate from a statistical viewpoint, I feel I have directed your attention to the unmistakable recognition of the substandard mentality and its relation to crime.

Note: The mental age reveals how intelligent a defective child is at the time of examination. The intelligence quotient tells how bright he is compared to a normal child and how intelligent he will be when he reaches the age of fifteen or the adult level.

The modern psychometric test classifies morons as those having an I. Q. between fifty and seventy, and as imbeciles between twenty-five and forty-nine, idiots less than twenty-five.

DISCUSSION.

Dr. J. A. O'Hara (New Orleans): It has been my privilege at a meeting held during this medical congress to discuss "Preventive Medicine" in its relation to infectious and contagious diseases. I am thankful to you for the advantage again to "champion" the cause of preventive medicine from an entire and independent subject, The Prevention of Delinquency and Criminality by Psychiatry.

It is absurd for us to assume that mental disturbances must confine itself to definite pathological changes in the individual brain, as we have been led to believe in considering the feeble-minded or insane, so, in discussing the relation of *prevention* (I like this word because it is the Aladdin's lamp that brightens the pathway for longevity to our descendants), so, again, in discussing the relation of psychiatry to prevention of delinquency and criminality, your special attention is called to subjects that you have on many occasions overlooked, unless you are fortunately a close observer of all mental and physical reactions.

Your attention please: All human beings are sometimes in serious conflicts with the laws and order of the community in which they live, and this is due to some passive mental disturbance in the cortical area. This inadequacy is generally of a minor sort and easily corrected by experience and time. We have with us in this group:

First, those individuals whose habits and behavior responses are far below their true mental reactions.

Second, those individuals whose actual mental capacity is below the level of adequacy.

The delinquent and criminal are those that fall below the lower level of adequacy of the second group. The problems of the first group are, then, one that by education, training and by strengthening the weaker points in their development, and by education of saner behavior and habits response, and bring them up to their full mental capacity.

For it is through this effective training that examples of reform and improvement have been observed, when they are properly combined with efforts of academic teaching which may be associated with psychiatry training under proper guidance. It was with this object in view that the Louisiana State Board of Health became interested in one of its new projects—the creation of the Mental Hygiene Clinic.

Dr. C. S. Holbrook (New Orleans): I am in accord with everything that Dr. Unsworth has said in his paper with possibly one or two exceptions.

The main value of studying children is due to the fact that school time is the golden period for mental hygiene. That is the time when children who are defective, or who are anti-social in any way, can be brought to the notice and study of the psychiatrists. The children who are definitely feeble-minded, and I think that is the type Dr. Unsworth had in mind primarily, can be discovered and segregated.

These children who cannot compete with the normal child should not be forced to make the effort to do so for failure and discouragement are bound to result. When the child is found to be mentally deficient steps can be taken whereby he can be placed in an environment which will be more congenial. If forced to do the things he is unable to do he will quickly drift into habits that are anti-social, or he will become a truant from school. From there he will enter into petty thefts, and from there the crimes will be of a higher order as his years multiply. We have a Municipal Home for Boys here, and a large number of children are sent there because of delin-

quencies which are the result of mental defectiveness. Often they are not inherently bad, but are unable to get along, so they drift into delinquencies. Recognizing these children early will make it possible to prevent crime of a more serious nature later on.

There are some children, however, who develop conduct disorders who are not feeble-minded. It is my feeling that these children are very hopeful because their reactions can be modified; they can be saved and taught the more proper way of living.

The feeble-minded child cannot be "cured" or made of average intelligence, but he can be saved from crime. The children with conduct disorders may have perfectly normal intelligence, or may be above the average intelligence, and they are hopeful when properly treated.

I wish to congratulate Dr. O'Hara and the State Board of Health on the endeavor that is being made to put a mental hygiene unit in the field. As I understand it, the plan is to have Dr. Unsworth, as head of the department, visit the various parts of the State; he, associated with a psychiatric social worker and a psychologist, will make investigations, deliver lectures, etc. Certain problem children will be found from the school records and these will be examined and treatment recommended.

In this way I feel quite sure that a great deal of benefit can be brought about, if the doctors get behind this project and give their support to the effort that is being made, very much can be accomplished.

Dr. L. V. J. Lopez (New Orleans): For the last seven years, as neuropsychiatrist of the Orleans Parish School Board, it has been my privilege to examine a great many children of the city of New Orleans who have been reported to the department of superintendence for truancy, vagrancy, and also on account of being repeaters, or repeating the various grades without making any progress in school.

It has been our problem in the public school system here in New Orleans to try to give these feeble-minded children the education which would in later years make them useful and productive citizens rather than making them wards of the State. Of necessity, this requires a weeding out process. We naturally cannot expect, in spite of all the progress that has been made in medicine, to use a very vernacular expression, to squeeze blood out of a turnip.

As physicians well know, feeble-mindedness, in contra-distinction to a psychosis, means an individual with lack of intelligence rather than one

who has lost his intelligence or power of reasoning. In other words, a feeble-minded individual, whether it is due to injury to the brain at birth as a result of prolonged labor or as a result of inflammatory processes to the meninges or the brain itself, or whether it is merely due to a condition of maldevelopment or undevelopment which may not have any pathological reason, can only be worked with through the innate endowment of that individual. In other words, you can go so far and no further.

It is up to the psychiatrist, in collaboration with the psychological branch, to determine just what biological level that individual can reach. We see some feeble-minded children that can go as high as the fifth grade. We would probably class them as high-grade morons. They may reach the ten-year-old level according to the Terman scale of intelligence.

As Dr. Holbrook has pointed out, the school age is the golden age of mental hygiene. These children can be taught special vocations, such as cane weaving, cabinet making, simple types of carpentry, and so forth. In some instances we have been fortunate enough, where the child can pass the fifth grade to the satisfaction of the school board, to be able to place some children at the Delgado Trade School to learn some simple trade.

It has also been my privilege, as there isn't any regular psychiatrist assigned to the Municipal Boys' Home, to share some of the burden of examining these children Dr. Holbrook has told you about, particularly the types that are bad actors in school and have been sent to the Municipal Boys' Home through court action. Those children in the Boys' Home are, to all intents and purposes, not much different from ordinary children. They have their urges; they have their impulses, and they have their emotional life. The only difference between them and the normal child is simply that due to their lack of intelligence they lack judgment, are easily influenced by other children who have had more training and probably have psychopathic trends, and the result is that they are misled, and easily led into criminal acts.

Therefore, I wish to conclude by congratulating both Dr. O'Hara and Dr. Unsworth on their splendid program in mental hygiene in trying to make a thorough and careful investigation of the situation of the feeble-minded in this State. I will admit that it is a very prodigious undertaking, and it is something which the national committee for mental hygiene headquarters in New York has tried by means of child guidance clinics to establish throughout the country. I wish this clinic, or department of the State Board, every

success, and also want to extend to them the co-operation of the School Board of this city.

Dr. L. L. Cazenavette (New Orleans): The subject is a very important one, and I am very much in accord with what has been said by those who have preceded me in this discussion, both Dr. Lopez and Dr. Holbrook.

The question is what to do with the feeble-minded, that is to say, those who present an amount of abnormal mental development not sufficient, however, to prevent them from doing certain things in life.

I think it is a waste of time to push these children through ordinary school, those not only unable to cope with others of their age but those who cannot appreciate the great difficulties in attempting to do so. I feel it is a question of frequently removing these children from their immediate environment, because we very frequently find that the parents of these children are the ones who are less likely to take care of them.

Once we have established, as nearly as possible, the mental age of the patient, then I think we should try as much as possible to send those patients to some industrial school, or something of that kind, so that they might be able to do something and probably take care of themselves in some way during later life.

Dr. W. J. Otis (New Orleans): I am sure every social-minded individual in the State of Louisiana, and I hope every physician, will receive with great acclaim the fact that the Louisiana State Board of Health has established a department for mental hygiene. There is no reason why this State should not compete or rank with other States in the Union. Why shouldn't we?

The question for discussion is feeble-mindedness and criminality. Not all feeble-minded or mentally defective people at any time in their lives run afoul of the law. These individuals, depending on the grade and depending on their environment, never come in contact with the law; they never become anti-social.

The determining of what is a mental defective and what is not should be accepted on the intelligence quotient alone. A number of people make the mistake in mental defectives, or feeble-minded, of using the intelligence quotient alone. It is not a fair test. The ten conclusive points should always be taken into consideration in determining these cases.

The question as akin to criminality: not all criminals are feeble-minded. Any criminal who can perform the acts and do the disastrous deeds that some of these criminals do can certainly not be termed feeble-minded. Their minds are much keener in a number of instances than our minds; their planning is much keener than our planning. Quite true, they have a criminal trend to their behaviorism, and they have a criminal trend of mind if you want to call it that, but that isn't a mentally defective mind.

A number of criminals may pose as feeble-minded. Those of us who have to contact ourselves with lunacy cases, criminal cases and medico-legal cases know that these individuals have conferences among themselves and tell each other how to act; and some of them try to act. Of course, to label an individual a feeble-minded criminal takes quite a lot of observation, and a number of visitations of the individual unobserved by the observed. If they know you are coming they are going to stage something for you. The best plan is to observe these people when they do not know you are observing them.

Again, I want to say that the state is to be congratulated. Dr. Unsworth and Dr. O'Hara are to be congratulated, and we hope for the best. If any of you people who are here at this time know of any instance where we can help, get in touch with the chief of the Mental Hygiene Clinic.

Dr. H. R. Unsworth (closing): The portion of my paper I considered vital was the statement made that individual psychologically develop along three levels: First, the intelligent level; second, the social level, and, third, the industrial or mechanical level, and that an individual may be considered feeble-minded though his intelligent level may be above 75 (I. Q.) as measured by academic tests. The greatest factor in determining an individual socially feeble-minded is a detailed study of his behavior life pattern. It has been my impression that all psychopaths are socially feeble-minded individuals, though not necessarily falling below 75 (I. Q.).

I wish to thank the members for their remarks in regards to my paper, and it is my earnest hope that the Louisiana State Board of Health will have the opportunity to do something worth while in the establishment of a bureau for the recognition of early feeble-mindedness and thereby diminish crime.

TEACHING AND CARE OF FEEBLE MINDED IN STATE INSTITUTION.*

R. C. TOMPKINS, M. D.,

ALEXANDRIA, LA.

All the states of the Union excepting five (Arizona, Arkansas, Nevada, New Mexico, Utah) have provided state institutions for the care and training of the feeble minded. The District of Columbia has recently established an institution for this type of case. One of the five states listed above (Utah) has recently had a survey made of its mental hygiene problems and one of the results was the recommendation for a separate institution for the care of the feeble minded, which I believe is now in the course of construction. So it will not be long before the list has been reduced to four. In Canada, a great deal of interest has recently been manifested in the care of feeble minded. Recently, Nova Scotia passed a bill establishing a school for feeble minded. Quebec has a new school for feeble minded. Recently Ontario has reorganized its institution so that a psychiatrist will be in charge instead of layman as formerly. British Columbia will probably soon establish a school, so it seems that with few exceptions most of the states and many of the provinces of Canada have state schools for feeble minded. Instead of a single school, many states have two or more schools. But even so, we are just scratching the surface. In Massachusetts the provision for feeble minded exceeds that of any other state and it has recently been estimated that only half of their cases requiring institutional treatment are receiving it. With these preliminary remarks, regarding the question in general, we will touch upon the condition in Louisiana.

Louisiana has one state institution for the care of feeble minded which was created by the Legislature of 1918, but due to lack of sufficient appropriations, did not begin to function until 1921 when 80 patients

from the two state hospitals, were transferred as a nucleus. All of these were adults.

The law creating our institution placed no restrictions upon admission other than the applicant be feeble minded. It was apparently intended that we receive all classes of feeble mindedness and this is what we do. We have white and colored; children and adults; epileptics and non-epileptics, delinquent and non-delinquent; educable and custodial cases. The placing of these various classes in one institution makes the problem of their care and training a very difficult one. The major problem at present is one of classification. On account of our limited facilities, it is necessary that we have young children of 5 to 16 years and adults of 20 to 60 years, in the same building. It is necessary that the epileptics be in the same building with non-epileptic; that the delinquent and non-delinquent live together. This is indeed a very poor arrangement but it is necessary due to our very limited number of dormitories and our acceptance of all type of feeble mindedness. With our present facilities we are only able to segregate according to sex, color and on the basis of tidiness and untidiness. On the colored wards, we are unable to separate the tidy from the untidy.

The caring for epileptic patients in a school for feeble minded is a very poor arrangement and is not fair to either class. The epileptic presents a separate and distinct problem and should be handled as such. We will soon have \$100,000.00 available with which it is planned to begin the erection of buildings to care for epileptics. These buildings are intended to be the nucleus of a separate institution for epileptics. They will be situated on the present property of the State Colony, but at such a distance that later separation of the two institutions will be possible. For the present, they will be under one management.

In a like manner, the caring for delinquents in a non-delinquent population pre-

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sents many difficulties. Just as the delinquent or criminal adult cannot adjust himself in civil life, and the delinquent child cannot get along with normal children, so the defective who is also delinquent cannot adjust himself in a population of non-delinquent defectives. The problem has been met in a few of our more progressive states by erecting separate institutions for the care of defective delinquents. However, most of our states are a long ways from obtaining such a desirable goal and it is necessary that they be cared for as at present. But provision should be made for the caring of these cases in separate units removed from the others. No one not familiar with this problem can realize the trouble and worry that these defective delinquents cause. The care of 1 such case probably entails more trials and tribulations than 100 non-delinquents.

I will not attempt to discuss the medical aspect of this question in my limited time, but will skip over and say a few words regarding their training.

We have 466 patients in our institution and of this number 111 are attending school. In addition about 150 others are engaged in some sort of vocational work about the place. The school proper includes the sense training class, the kindergarten, first, second, third, fourth, fifth and sixth grades. This is just about as high as a feeble minded individual can go. The sense training class is the most elementary class and is for those pupils who have a mental age below 5 years. They are taught such elementary things as the recognition and identification of various colors, various forms such as round and square, various sounds from different instruments or whistles; the recognition and identification of taste of various substances as sour, bitter, sweet, and salty. In addition they are taught to lace and unlace shoes, to button and unbutton clothes. In other words as the name suggests, the training of the five senses. In addition to this, habit training to care for bodily functions is stressed.

The other grades from kindergarten to sixth more or less follow the similar grades in our public school except that probably a bit more attention is given to manual work. Of course, instead of completing a grade each year as a normal child does, the feeble minded child takes 2 or more years to make a grade. This usually occurs around 16 years.

After the child has reached the height of his or her development, he or she is given vocational work commensurate with his or her physical and mental equipment such as sewing, rug making, working in laundry, dairy, farm, and with florist. Again we are handicapped on account of lack of suitable equipment. We need an industrial building for boys and girls where other forms of manual training could be taught such as broom, mat and brush making, printing, woodworking, basketry, tailoring, cobbling, etc. This industrial work is extremely important. It goes without saying that the scholastic work is very important but it is the feeble minded person's proficiency in some manual work that he or she must rely upon to earn their living later. This fact should never be lost sight of, that the entire training is arranged so as to enable the child to be self supporting or partially so in later life. The work taught should be fairly simple so that the child will ultimately be able to become proficient without much supervision. There are a large number of pupils who will always remain custodial and part of their training should be arranged with this in mind. The care of wards and clothes room and the care of the smaller helpless children should be taught as it is of decided benefit to both pupil and institution. The fact that the child is able to accomplish something, no matter how small, is of considerable importance. It lessens his feeling of inferiority and gives him the price of accomplishment and helps to make him contented and happy. In the final analysis, the happiness of the child is what we are striving

for, provided this happiness is not obtained by encroachment upon the rights of others.

It goes without saying that the teachers should be especially trained in handling this class of patients.

Recreation and amusement should never be lost sight of as true to the old saying, "all work and no play makes Jack a dull boy." The play should be well organized and under a director so that each child will take part. The amusements are varied to individual conditions existing. One effective means of discipline is preventing a child attendance at some of the various amusements for a varying period of time.

DISCUSSION

Dr. C. V. Akin (New Orleans): This is not the first time I have been called upon to discuss an excellent paper by a recognized authority on a subject of which I had but little or no personal knowledge. This is, however, my initial effort without the benefit of collateral reading or conference with better men and I stand before you acutely aware of my shortcomings. My first glimpse of Dr. Tompkins' paper was last night at 7:30 when I returned to my office after a three day absence from the State and before attempting comment I wish to apologize to Dr. Tompkins and to you for my apparent presumption.

As a professional public health worker of over 15 years experience, I am vividly aware of the problems which confront State authorities charged with the care and training of the feeble minded. Dr. Tompkins has ably summarized the problem in some of its complex ramifications as applying within a State institution. The indiscriminate association of all classes of feeble minded persons under one roof is manifestly unscientific and uneconomic and tends to defeat the purpose for which those lacking in normal intellectual development were brought together. The solution obviously lies in the provision of more institutions to care for the conflicting classes as catalogued by Dr. Tompkins. This calls for more money; lots of it; and this is apparently the closed season where such calls are concerned.

From the economic standpoint, it must be agreed that institutionalizing the recognized feeble minded is the most efficient and least expensive procedure to be suggested as capital outlay, maintenance and overhead are reduced when the individual subjects are removed from the home and community environment and collectively cared for at suitably located colonies and schools.

Of prime importance, is more exact knowledge of the extent of the problem throughout the State and these data must then be integrated with schedules showing specifically cost to State of the whole group, controlled and uncontrolled. Such studies are rendered exceedingly difficult by the fact that except in well developed cases recognition of the state of feeble mindedness is not an easy matter and may not be diagnosed by physical appearance or by some outward expression or peculiarity. Retardation may not be evidenced until the child attends school and after repeated attempts fails to advance. If neglected at this crucial point the feeble minded child enters the period of greatest danger as susceptibility to evil influences is most marked in this group. Close co-operation between school and public health forces is vital if those who require special attention are to be weeded out and given protective and developmental care and training. Dr. Tompkins tells us that his colony numbers 466 patients, which we may assume is only a fragment of the group requiring institutional care in Louisiana. This conclusion is based on the fact that in New York State out of the thirty odd thousand known feeble minded only about 12 per cent were cared for in special institutions in 1914.

Dr. Tompkins further states that, if his colony population, 111 are attending school. I think that the Superintendent of the State Colony and Training School is to be congratulated on his record of 24 per cent school attendance in a group embracing all classifications of feeble mindedness.

Those who are unfamiliar with the demands of institutional care of these cases cannot comprehend the requirements for patience, tact, tolerance, stability, humaneness and devotion to duty exacted of training and teaching staffs. In contrast to the vital, plastic minds which make up the material with which the public school system works, Dr. Tompkins and his associates must labor with a group for which mental fog rather than intellectual sunshine is the rule. His function is to salvage those for whom there is some hope and through infinite care to restore them to a useful, though necessarily restricted life.

It is held by some that social, moral and emotional discipline and example are more important for the defective child than strictly scholastic training. Protection from improper knowledge and association is essential, especially at puberty and adolescence. Special training and association in order to modify traits of disposition, personality and character, for strengthening desirable traits and repressing undesirable ones constitute the task of staffs of institutions for the feeble

mind. Vocational and manual training, carefully adjusted to meet the requirements of the individual problem, are indispensable to successful development of the defective child. Preliminary to and supporting such developmental efforts is the scholastic training through which may be determined the capacity of the given child for readjustment.

According to one authority (Fernald, *Men. Hyg.* 8:964, 1924), defective children who succeed in life do so because they become capable of doing worth while work with their hands. He considers this to be the end and aim of all training with such children.

I deem it a privilege to offer to Dr. Tompkins every resource of the Parish Health Unite Organization to further the admirable work he is doing.

Dr. W. J. Otis (New Orleans): Of course, occupation is the best panacea for idleness both in the normal and in the subnormal individual. The step taken in Louisiana to attempt to bring this state to the fore in comparison with some of our sister states is quite an effort. It is a project that is going to require much painstaking attention, much impersonal assignment or alignment of things only for the good of these afflicted people. Directly that you lose sight of the effect, directly that you lose sight of the personal side of these people, who are children, you do not gain, you do not make any attempt; neither do you bring to the fore—not only for the state but for the United States—the good that can be accomplished.

I mean by that you must have intelligent teachers, I don't care in what state. If they can be obtained in Massachusetts, New York, Tennessee or Connecticut, the same can be obtained here. Only place individuals who are capable. Occupational therapy needs specially trained men and women who give their lives absolutely to that purpose; not an individual with a high school training who is a friend of some friend, who is a friend of a friend, who knows nothing about the social contact of the mentally defective, who knows nothing about the problems that we encounter in these children who have tantrums at nine o'clock, who are happy at eleven o'clock, who are crying at twelve o'clock, and who at three o'clock apparently act like normal children. Those things should be borne in mind.

Then, too, you have to have a sympathizing type of individual, not necessarily morbidly sympathetic. Of course you have to temper firmness with kindness in handling these people.

I should like to ask the doctor what percentage of his colony are really self-supporting, as it were,

inside the institution. In other words, could a certain percentage of his population be paroled outside as other states are doing? Does he contemplate a parole system? How is that to be managed? Also, I should like to ask how many applicants he has on the waiting list?

Dr. R. C. Tompkins, Alexandria (closing): I enjoyed Dr. Akin's discussion very much. I don't believe Dr. Akin asked any questions.

We have a parole system, and we do parole them, you know; just what per cent I couldn't say right now. I couldn't say now what percentage would be eligible for parole. I would say ten per cent, anyway, at the present time.

We have 150 that do dairy and farm and different work around the institution. That is about one-third.

I fully agree with the doctor about occupational therapists. They should be very competent. We are handicapped there by lack of funds and appropriation. We hope to be able to do that as soon as we can get the appropriation.

I suppose there are about 600 or 700 on the waiting list. I wish to state that we are crowded right now. I took charge of the institution the first of October, and I have taken in 100 since I have had charge. We have filled up all available space.

THE PUBLIC HEALTH ASPECT OF VENEREAL DISEASES.*

O. C. WENGER, M. D.,†

Hot Springs, Arkansas

It is my privilege to appear before you today as a representative of the United States Public Health Service, with a plea soliciting your support and co-operation in the prevention and control of venereal diseases. The success or failure of this nation-wide program depends more upon the attitude and co-operation of the medical profession than upon any other one factor. Without the support of organized medicine, which means you gentlemen who are in active practice, this program will fail. As the matter now stands, we of the Service, who are responsible to the American public, through an act of Con-

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†United States Public Health Service, Venereal Disease Clinic.

gress, for the administration of this program have been forced to the conclusion that the individual physician and organized medicine are not carrying their share of the burden.

Shall it be said that a profession, which in the past, has made such progress in the control of yellow fever, typhoid, tuberculosis, small pox, and diphtheria, will calmly stand by and see the ravages of what is now considered one of the most important public health programs of the age go unchallenged?

Gentlemen, I say in all sincerity, that the venereal diseases are a challenge to our profession, which we must accept if we hope to retain the confidence of the public and our own self-respect. We believe that these diseases can be controlled by the application of certain principles embodied in our program, but this program is built on the co-operation of the men who are practicing medicine today in the United States. This means that every member of this society and every other society must do his part.

The principles are as follows:

1. Early recognition of infection by careful physical examination, with complete records of each case.
2. Ascertaining the source of infection which is to be reported to the local health officer at once.
3. Adequate treatment in the early stages of the venereal diseases, and in the case of syphilis treatment for three years and careful observation with semi-annual check-up continued through the fourth and fifth year, at a fee within the patient's earning power.

Co-operation with Federal, State and local health organizations.

EARLY RECOGNITION

Recognition of syphilis in all of its different manifestations is only possible after a thorough physical examination, with the

patient stripped. We should remember that weeks or even months may have elapsed before the appearance of the initial lesion. Yet we know that the patient's infection actually dates from a few hours after exposure, and not from the first appearance of the lesion. In other words, when the patient presents himself for examination to his physician with a local lesion, the disease is no longer local, but a general systemic infection has existed for several weeks before the local lesion appeared.

It is for this reason that abortive measures at this stage will not be successful.

The keeping of proper and complete records is very important in the treatment of venereal diseases. This is especially true of syphilis. No physician should trust his memory to keep records. The physician who is too busy to keep proper records should in fairness to the patient refer him to someone else for the necessary treatment. One cannot treat syphilis successfully without records.

SOURCE OF INFECTION

It is just as important for the attending physician to get the source of infection from the patient as it is to treat the individual patient, from the standpoint of public health and preventive medicine. It is surprising how many sources of infection can be uncovered and brought under treatment if the attending physician will just take a little time and trouble to get this most necessary information. Many times the patient will bring his sexual partner to the physician for treatment, if not then such information should be reported to the local health officer at once, with a request that he report his action back to the physician.

In a small community one foci of infection, if not discovered and brought under control, may be responsible for many cases. This is especially true in the case of a woman. I recall one instance where 16 cases of gonorrhea occurred in a small lumber camp in Arkansas. An 18 year old girl

was responsible, and unfortunately two innocent wives were infected. This is just one instance in many that could be related. The physician who co-operates with the local health officer in this regard might, by so doing, prevent an infection of someone who is close to him.

ADEQUATE TREATMENT IN EARLY STAGES

By adequate treatment in the early stages of syphilis we mean that treatment be instituted immediately since every hour counts. This is very important and cannot be overestimated, if we hope to prevent later manifestations of the disease and protect others from infection. It is an accepted fact that it is the treatment the patient receives in the first few days and weeks of his infection which determines the end result, and it is in this period that treatment must be pushed to the very limit of the patient's tolerance if there are no counter indications.

It is a safe rule to follow to give energetic and continuous treatment to the young patient with syphilis who is otherwise physically fit, and to be very cautious in treating patients who have had their infection for years, even in the face of positive serology and clinical evidence of the disease. While no definite standard can be safely outlined, due to individual idiosyncrasies of the patient, one may say in a general way that the young patient with early syphilis should receive not less than 25 doses of arsphenamine and 100 doses of mercury or its equivalent in bismuth, the first year after his infection, even though the Wassermann becomes negative and clinical symptoms have disappeared.

During the second year probably half of this amount will suffice if no clinical evidence appears, and the blood, spinal fluid, and cell count is negative. During the third year, with no clinical symptoms one may repeat the course outlined for the second year as a precautionary measure. However, if the serology becomes positive, or clinical symptoms appear, more energetic

treatment is indicated. The appearance of any neurological symptoms, continued positive reactions, or non-improvement of the patient for any reason demands consultation.

In late syphilis one must be more cautious, even in the face of clinical evidence and positive serology. There is no reason to believe that these old cases who have been infected for many years, and usually with indifferent treatment can ever hope for more than temporary relief. Eradication of the infection is out of the question because tissues that have been invaded have undergone certain definite pathologic changes, which no amount of treatment will improve, but frequently does a great deal of harm. Deal gently with these cases. It is of no benefit to the patient or his family to have his life shortened by the indiscriminate use of such therapeutic and toxic agents as arsenic, mercury, and bismuth. Temporary improvement, under mild treatment, is all that can be expected.

FEEES

One of the most important factors in the control of venereal diseases is the unequal ratio between the fees charged by some physicians as compared to the patient's earning power. As pointed out by Moore in the February number of *Venereal Disease Information*, a monthly publication of the U. S. Public Health Service, the majority of infections occur in later adolescence and early maturity when the patient's earning power is comparatively low. This is an unfortunate situation, both for the patient and the attending physician. It is, I believe, a well authenticated fact, borne out by a review of some 20,000 histories in the U. S. Public Health Service Clinic in Hot Springs that many patients are charged fees not only in excess of their income, but entirely out of proportion for the treatment the patient received.

This one fact is responsible to a great extent for the later tragedies in the lives of these patients. Time and time again

have patients told us of the exorbitant fees charged for treatment, which amounted to nothing more or less than mild blackmail, since the physician took what any reasonable person would consider to be an unfair advantage of the unfortunate patient.

No physician worthy of the name would refuse to operate on a case of appendicitis, or treat a child with diphtheria, just because the family could not afford to pay the regular fee. He most certainly would be condemned by his colleagues and the public at large if he permitted a patient to suffer and possibly die of neglect if he persisted in his attitude. Yet it happens time and time again that patients are refused treatment in early syphilis, when it is so important, simply because the patient cannot pay the fees charged for the administration of arsphenamine or an injection of mercury or bismuth. Such an attitude on the part of the physician should be severely condemned because it puts the entire profession in a bad light.

In the February number of the *A. M. A. Bulletin* an article by the new president-elect is illuminating on this very question. The patient who is refused treatment does one of two things. Either he takes no treatment whatever, and later becomes a charge on the local community, which the physician as a taxpayer helps to support; or the patient makes his way to a large medical center, oftentimes undergoing great expense for transportation and maintenance while taking treatment as a clinic patient. Again, the physician as a taxpayer, pays his proportionate share for this free treatment. In either instance the physician suffers a direct financial loss.

Perhaps there are some of you who feel that free clinics are an infringement upon your practice. It might be interesting to report the results of a recent survey made by the U. S. Public Health Service in the State of Tennessee. In this survey 85 per cent of 1,684 cases of acute gonorrhea were treated by private physicians and only 15

per cent in public clinics. In the same state 60 per cent of early syphilis was treated by the private physician, and 40 per cent in the clinics. In late syphilis these figures were reversed, approximately 60 per cent were treated in clinics and 40 per cent by private physicians.

It is not hard to explain this condition. The treatment for gonorrhea is not as expensive as the treatment for syphilis. Therefore the patient is able to pay his physician the usual fee charge for such treatment. In early syphilis with higher fees only 60 per cent of the patients go to private physicians. Now in late syphilis we find that only 40 per cent of the patients find themselves able to pay for private treatment. One can readily see that as the patient gets older and becomes more incapacitated as his disease progresses he is forced into the clinics.

Would it not be better for the physician and the patient if the fees charged in early syphilis were such that the patient could afford to continue treatment over a longer period of time, and possibly prevent the manifestations and tragedies of late syphilis?

CO-OPERATION WITH LOCAL, STATE, AND FEDERAL ORGANIZATIONS

As practicing physicians duly licensed by a State Board of Health it is your duty to report all cases of venereal diseases that come under your care as required by law. It is just as important to report venereal disease as it is any other infectious or contagious disease. Yet we find that physicians as a whole throughout the United States are not obeying the law. It is unreasonable to believe that professional men who are honored and protected by a State License Board will permit indolence and general indifference to interfere with this important duty. I have yet to hear one good argument from a physician as to why he would not report these cases. Certainly, as physicians, we are interested in the gathering of valuable statistics, but unless the physician who sees and treats the majority

of these cases does not report them as required by law, the Federal and State Health agencies are working under a severe handicap.

COMMON ERRORS IN DIAGNOSIS AND TREATMENT

Recently we had occasion to go over some 20,000 records of patients who were treated at the Government Clinic at Hot Springs. In this review certain interesting facts were brought to light, which are the basis of the following conclusions:

The general profession, as a whole, does not recognize syphilis, nor even suspect it in the face of clear evidence.

The Wassermann and darkfield examination necessary to detect early syphilis are frequently omitted, or improperly interpreted.

The physician still too frequently accepts the patient's statement that he had a "soft chancre" without further investigation.

A negative Wassermann generally eliminates the possibility of syphilis from the physician's calculations, despite clinical evidence to the contrary.

Many physicians erroneously believe that aortitis is simply a valvular disease of the heart and give no thought to its syphilitic etiology.

A history of repeated miscarriages in the female frequently does not raise a suspicion of syphilis.

Gumma are usually assumed to be caused by varicose veins.

Patients with ununited fractures are permitted to lie in bed for months without a suspicion of syphilis.

The gastric crisis of late syphilis is commonly diagnosed as "gall stones," "chronic appendicitis," "gastric ulcer," or "stone in the kidney," and sent to the operating room for surgical interference.

Pellagra is frequently diagnosed as syphilis, and vice versa.

Gumma are oftentimes termed malignant, especially in the mouth and on the skin.

Early optic atrophy, iritis, choroiditis, retinitis in several instances have been treated by eye men without a suspicion of syphilis.

Deafness, particularly of the nerve type, is treated with inflations, without regard to cause, which in two cases coming to my notice proved to be syphilis.

Strictures of the rectum are rarely diagnosed, and incontinence of urine due to neuro-syphilis or a hypertrophied prostate are frequently overlooked by the general practitioner.

Paresis seems to be only diagnosed by the expert medical witness after a murder has been committed. It is rarely considered by the general practitioner to account for the patient's behavior until after he has committed some crime or become frankly insane.

Apparently all syphilis must agree with the usual text book picture illustrations at the time of examination. That is a circumscribed lesion on glans, mucous patches in mouth, alopecia, and a positive Wassermann, with a macular rash on body. On one occasion, at least, a patient with practically all these symptoms was able to persuade his physician that he had not exposed himself for months and so the condition could not possibly be syphilis. As a further criticism of the physician I might say that he saw only the penile lesion but did not take the trouble to strip and examine the physician.

The social standing of several of our patients was enough evidence to preclude the possibility of syphilis in the minds of their physicians.

The wife and children of a known syphilitic are usually not considered nor examined for possible infection.

Spinal tests, as a rule, are not done except in hospitals and in larger cities.

The old gonorrhoeic is still being treated for rheumatism and arthritis, with salicylates and other drugs. A prostatic massage or investigation of the deep urethra was rarely reported by the patient.

Spurs on the os calcis are either diagnosed as rheumatism or fallen arches, and the patients come to the clinic with arch supports. Strictures are frequently overlooked, and just as often diagnosed when none exist.

The dorsal slit is still popular among a large group of our profession, especially when the lesion is covered by the prepuce. There is no objection to the dorsal slit if done under hospital conditions, with the necessary follow up treatment. What usually happens, however, is that the slit is made in some doctor's office and the after treatment is neglected until the entire organ is involved. We found it necessary to amputate in four cases in the last nine years.

Innumerable cases in this study had been diagnosed as neuritis. Teeth were extracted, tonsils removed, appendectomies performed, and sinuses drained without any examination of the prostate, probably because the patient denied gonorrhea.

Is it a wonder that so many cults in medicine are prospering with pseudo-sciences and victimizing a gullible public at the expense of the regular physician? Go into any drug store and gaze upon the shelves at the many different nostrums now on the market, which earn the American public the unenviable reputation of using more patent medicine than any other nation on the globe. Are we as a profession not responsible for at least part of this evil?

Gentlemen, the facts disclosed by this study are indictments against our own profession. Whether we are guilty or not, I leave to your judgment. Any improvement in this situation will depend upon the co-operation and interest you gentlemen take in the matter.

In conclusion may I thank you for your courtesy and attention, which is appreciated. The U. S. Public Health Service is ready to do whatever possible to aid you in the solution of venereal disease problems.

DISCUSSION

Dr. J. E. Knighton (Caddo, La.): I really don't feel competent to discuss this paper, but I appreciate it for its real worth. I believe it has called our attention to many things that we need to think about.

My work is confined to internal medicine and I, like every other doctor no doubt, come in contact with conditions in patients that are due to the oversight on the part of physicians who have seen them earlier and, in part, due to the neglect of the patients themselves.

I think it is well that papers like this be brought to the attention of the physicians as well as to the public, that the people themselves may be educated along the lines of the necessity for applying early for treatment, and staying with the physician that treatment may be carried out over long periods.

I think the doctor's criticism with reference to the financial side of the question is very appropriate. We all remember when, for instance, the intravenous method of treatment was first begun. We looked upon it with the gravity of a major operation, and it was a common thing for physicians to charge fees commensurate with the gravity of a major operation. Of course, we recognize now that that is all wrong, and we must take into consideration the economical side of the question, remembering, as the doctor pointed out, that if the patient fails to stay with the treatment for a sufficient length of time to be really well, and cured where it is possible for him to be cured, ultimately we as taxpayers are paying the expense of the mistake.

There are so many good things the doctor called to our attention. I can't recall them all, but I really do appreciate it and I think the paper is very appropriate.

Dr. R. McG. Carruth (New Roads, La.): I was so impressed with Dr. Wenger's paper that I wish it could be put upon the radio in popular language so as to reach every household in the State of Louisiana.

While I practice in a small town, I have devoted some special attention to venereal diseases for the past twenty-five years or more. And while I do not do anything like the amount of practice in this line that specialists do, I have kept records

of every case I have treated. I want to say that some years ago it was impossible to hold our cases. We never held them. They would come in, whether for gonorrhea or syphilis, get two or three treatments—I am going back before the days of salvarsan, since I have been practicing forty-nine years, a longer period than most of you gentlemen here,—and as soon as their discomfort would be relieved, we would, in most instances, never see them again. More than once I have refused to take a patient's money when he would not promise to return regularly for treatment. Only a short time ago I had ten dollars laid on my desk for one single prescription and I told that patient that I would not relieve his discomfort and turn him loose upon the world a carrier for the balance of his life for his ten dollars or his one hundred dollars. I wanted to impress him, and told him if he would promise to be faithful and return to me regularly until he was most probably free from the disease, (and I know that we can never be sure of this, although, probably more or less certain) I would take his case, otherwise not.

And I wish to say right here that this is one of the reasons why I am so insistent about a hygienic marriage law, because since we have had a marriage law in this State, as imperfect and ineffectual as it is, we do hold our cases a little better than we ever held them before. Young men come to me and say, "I know if I do not get cured, when the time comes that I may want to get married, I may be turned down."

Now, so far as being turned down is concerned, I must say that I turn them down all the time, but they go up the street or down the street, or across the river to the nearest big town and get their certificates without any trouble. I do not know of a single case that has failed, and I have put out a little questionnaire on the subject in our parish medical society.

I wish to ask Dr. Wenger, if he will not, in closing, kindly tell us more in detail as to his method in treating syphilis. He spoke of giving twenty-five shots of arsphenamine during the first twelve months. This has not been the method I have followed, although I would not at all advocate mine as against his,—a specialist's. They won't always come back, but we do the best we can. I have always tried to give them six shots, then a rest of about a month, of course keeping up the subsidiary treatment; then six more shots followed by the same intervals, and then six more, and then advise them to come back in a few months, and thereafter semi-annually or annually for repeated blood tests.

Dr. J. M. Adams (Baton Rouge): I should like to ask Captain Wenger what line he draws between a new case and an old case. I am particularly interested in this because I am making blood examinations on a group of negroes and find histories of syphilis dating anywhere from two months to twenty-five years. I have been advising all of these cases to take treatment with a view to health preservation, and I want to know how much harm I have been doing.

Dr. O. C. Wenger (Hot Springs): In speaking of early syphilis, we refer to primary and secondary syphilis. The routine we carry out in Hot Springs in the treatment of these cases is 25 doses of arsphenamine and 100 doses of mercury intramuscularly during the first year. We prefer arsphenamine to neo, and give 0.4 gram twice a week for six weeks. At the same time the patient receives one-third grain mercury benzoate intramuscularly three times a week. For the six weeks course the patient receives 12 doses of arsphenamine and 18 of mercury. If the patient can remain longer, the mercury is continued, providing no contra-indications such as kidney irritation develop.

The patient then returns two or three months later when 12 more doses of arsphenamine are given. The mercury is continued.

This treatment gives us the best results in early syphilis. We no longer speak of "curing" syphilis, but rather speak of arrested syphilis, as we do of tuberculosis.

In answer to the question how much treatment should be taken by a patient before he is permitted to marry I can only say that I personally have advised against marriage at any time in most cases. As a physician, I would not be willing to let a man marry my own daughter if I knew he was at one time infected with syphilis. Each physician should ask himself whether he would be willing to advise marriage of a known syphilitic to a member of his family. A patient with syphilis, if he is wise, will live the rest of his life under medical observation, with frequent physical examinations. This seems a rather broad statement, but those of you who are doing special work in internal medicine will agree with me that late manifestations of the disease are very common.

In latent syphilis the treatment must be more guarded. Inunctions may be preferable where the patient refuses to take the intramuscular route. Mercury by inunction has several disadvantages as proven by our experience in Hot Springs. Formerly we used the inunction method entirely in the following manner: All of the patients, some two or three hundred in number,

were first given a hot, soapy bath, followed by a rub down. The patients then arranged themselves on long benches, one in front of the other and each patient rubbed a quarter ounce of 50 per cent mercury ointment into the back and shoulders of the man in front of him. It took approximately thirty minutes for the mercury to be rubbed in. The patient replaced the clothing after the excess of mercury had been removed and went on his way. He received a rub like this every day in the week except Sunday. In many instances we had a great deal of trouble with skin infections following this treatment and toxic symptoms, because we have no way of controlling the dose of mercury by the inunction method.

The ideal way is to have the mercury rubbed in by a trained masseur, when this is possible. It is unsatisfactory to have patients rub themselves. One must remember in treating a patient who has had syphilis for ten or twenty years and has no clinical symptoms, except a positive Wassermann to proceed with caution. If arsenic, mercury, or bismuth is used the patient should be carefully watched. The point I want to drive home is that in these latent cases of syphilis the ultimate cure is out of the question. Syphilis attacks the blood vessels early in the course of the disease, and certain pathologic changes have taken place which the stethoscope and roentgen-ray may not reveal. Remember, too, that the liver and kidneys of a man of fifty, especially one that has had syphilis for some ten or twenty years, may break down under therapy. In these late cases you are just as likely to do more harm than good by over treatment.

I do not believe that the clinical results between arsphenamine and neo-arsphenamine can be compared. Arsphenamine is by far the better drug. However, one should have some experience in the neutralization with sodium hydroxide. For the man in the country, neo-arsphenamine, which requires no neutralization, is much safer.

In answer to the question about sulph-arsphenamine, I can only say that we have had three deaths from its use. I believe sulph-arsphenamine is more toxic than arsphenamine, and, furthermore, we found no advantage in its use.

In regard to bismuth our experience has been very limited. We have found, however, that bismuth causes gingivitis and irritates the kidneys just as much as mercury. The injections are much more painful to the patient, and there has always been a question in my mind of just how much bismuth is absorbed when put into the muscle. Certainly, the danger of abscess is increased.

Some experiments are now being conducted at the Public Health Service Clinic at Hot Springs on bismuth. The results will be announced later.

In regard to the use of the iodides: Clinically I think they are of great value. Our problem in Hot Springs is somewhat different from that of the general practitioner. All of our patients are indigent and therefore cannot remain under treatment as long as we wish. Therefore, we are concerned about getting the patient non-infectious at the earliest possible time and pass him over to the family physician who continues the treatment, so we give the patients arsphenamine, mercury and K. I. all at the same time if it is necessary.

Dr. Toler: You spoke of fees or the experience you have had with patients from different localities. I should like to know just what you would consider the average fee for each individual case.

Dr. Wenger: Certainly it all depends upon the man's earning power.

Dr. Toler: With the average earning power, what would be the average fee?

Dr. Wenger: Let's assume the patient earns a hundred dollars a month and is unmarried. This patient must pay room and board. Part of his salary is usually given over to help take care of the other members of his family. It would be far better to say to this boy, "Look here, I will treat you for one year for two hundred dollars." This is better than charging five or ten dollars a dose for injections. The patient should be able to pay \$20.00 a month for his treatment. If he must pay more than he can afford he feels it cheaper to borrow money and go to places like Hot Springs. He does not consider the railroad fare to and fro from Hot Springs, the cost of maintaining himself while taking free treatment, or the money lost in wages for six weeks. All he thinks about is that he can get free treatment. So it comes down to this: if the local physicians overcharge these patients, the patient simply spends his money for railroad fare and maintenance, money which rightfully belongs in his home community. When these facts are considered and brought to the patient's attention he will be willing to pay a reasonable sum monthly for his treatment.

Dr. C. M. Horton (Franklin): As you know, syphilis is very prevalent in the colored race, and as they are largely our servants sometimes the question arises as to the danger of employing these people as cooks, chauffeurs, and general men of work about the place. Some time ago it was discovered that the chauffeur in a white

family had had an original lesion and the question was asked me as to the danger of employing that boy. I discussed the question with one of the urologists, and his reply was if we gave the man five or six injections of neo he would probably be all right.

What is your opinion about employing cooks or men about the house who are known to have syphilis, and who still have it? If you discharge one, you probably get one that is worse, or a newer case.

Dr. Wenger (closing): To answer Doctor Horton's question:

The urologist might make the patient non-infectious temporarily with five or six injections of neo. By that I mean the lesion would probably disappear after that treatment. However, mercury should be given at the same time. .

The danger of infecting others from cooks, chauffeurs, etc., depends entirely upon how closely they are associated with other people. Danger of infection through food is rather remote. However, to be on the safe side, these patients should not be employed until they are non-infectious.

THE PREVENTION AND CONTROL OF TUBERCULOSIS IN CHILDREN.*

EMILE A. BERTUCCI, M. D.,

NEW ORLEANS.

Until a specific substance is found that will combat the ravages of the white plague and to act as an agent that will specifically cause an immunization against the invasion of the tubercle bacillus in the human organism, we can only hope at the present time to strengthen our prophylactic forces against an enemy that slowly but steadily is claiming many victims annually. Some of the present day methods of endeavors to produce immunization in children is only a forerunner of what might be done with this gigantic problem. Until then we must be satisfied with safeguarding our children with all the possible prophylactic measures at our command and to establish an unsurmountable barrier from the invasion of this arch enemy of destruction.

The purpose of this paper is to convey the facts and situation that might be studied in the prevention and control of tuberculosis in children from a prophylactic and hygienic point of view, to build upon what material we have now available, to elaborate and to recognize methods, to instruct communities, to weigh circumstances, to size up situations that might prove a helpful adjunct in the control of this disease in the child.

The so-called specific prophylactic biological methods that have been used in the past and are now being used have had their pros and cons and their small percentage of followers which advocate these methods have fallen by the wayside to ultimately yield, by failures and to return to natural prophylactic methods until some future time when research work on this subject will have reached its highest pinnacle of perfection and success. The probability is therefore that the great part of the work of medical men is hereafter to be done in preventive medicine and in regard to tuberculosis preventative medicine is already a fact. I feel that tuberculosis crusades promise great benefits and I look for a natural diminution of infection from extended and intensified prophylactic methods and for sufficiently striking changes in the direction of a lowering of the frequency of infection together with a reduction in the morbidity and mortality.

It is in the last analysis an education of the people in social hygiene and every kind of education should begin in childhood. Of late years, special study has been devoted to tuberculosis in children for it has been found that the disease is much more frequent in childhood, than was formerly supposed, that the frequency increases with the age, the greatest frequency being between five and fifteen years of age. Autopsies made upon children reveal considerable amount of tuberculosis of the glands, or other parts of the body. Autopsy statistics have shown that tuberculous infec-

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tion is found in about 40 per cent of all children dying under fifteen years of age.

In my examination of approximately 10,000 school children during the past two years, about 20 to 25 per cent gave evidence of tuberculosis, of course I do not mean active pulmonary disease but the inactive form or what I term the pre-tuberculous type of which I will explain later.

Other medical examiners in Paris schools have found as high as 40 per cent with signs of the disease. In New York, the examination showed about 30 per cent of tuberculosis of the lungs.

Dr. Wm. C. White of Pittsburg stated that 90 per cent of all school children in large cities have tubercle bacilli in their system before reaching the age of 19 years. Hamburger, a German authority, stated that he found latent or inactive tuberculosis present in 71 per cent of children from 7 to 10 years and in 94 per cent from 11 to 14 years.

I believe that most cases of adult tuberculosis become infected in early life in childhood, as the figures first cited appear to show—and that during this period the disease remains inactive or latent, that is showing no symptoms. When the child however undergoes the stress and strain of study and confinement in school, or in adult life enters into the struggle of earning a livelihood, with all the coincident depressing influences upon the health, the tuberculous infection, before latent, becomes active and tuberculosis in some form develops.

Tuberculosis in early life is responsible for many far-reaching disabilities, and not a few of life's long postponed disasters. If we are to prevent tuberculosis in children we will naturally have to consider the mode of infection.

If so large a proportion of children as I have indicated have tuberculosis in some form, how did they contract it? First of all—children as we know are more suscep-

tible to it than are adults. They cannot resist unhygienic surroundings as well as adults and add to this, a case of tuberculosis in the home, and we then have the conjunction of favorable soil and the seed. It is probable then, that very many cases of tuberculosis in children arise in a consumptive home. Some cases are contracted from other school children and occasionally from a tuberculous teacher.

With regards to the channels of infection, whether by inhalation or through the intestinal tract, this does not make much difference, for the method of prevention is the same as we shall presently see.

There is another view as to the cause of so much tuberculosis in children and that is a contaminated milk supply, but although our modern health regulations has reduced this source of infection to a minimum, there is still a wide diversity of opinion as to whether milk containing the bovine bacilli is responsible for the infection in children, and while it frequently does we have not sufficient proof and much against this. For example in Japan where there are no cattle milk is never used as infant food but tuberculosis is just as frequent as in countries where milk is used. In Constantinople where the mothers invariably nurse their children, tuberculosis is very prevalent. Again, the prevalence of tuberculosis among Esquimaux in Greenland where mothers invariably nurse their young for a long period speaks against a source of infection from milk supply of cattle. Koch himself stated that bovine bacillus is rarely found in human beings, and does not believe that milk is a frequent cause of tuberculosis in children. On the other hand many authorities state that bovine infection in children through milk will cause tuberculosis of bones, joints, glands and intestinal tract, which recent investigation has proved to be a fact. However, we should still use every means to safeguard the milk in the present state of our knowledge upon this subject by assuring ourselves that it comes from healthy cows, or by sterilization.

We must therefore regard the chief cause of pulmonary tuberculosis in children as house infection and a child in a home where there is a case of tuberculosis particularly when it begins to creep and handle things and puts them in its mouth, has abundant opportunity to become infected.

The most common form of tuberculosis in children is hilus tuberculosis also termed latent or "closed" form, and in this I see a great advantage of treatment for when it is in this stage and non-infectious we kill two birds with one stone, viz., save the child and prevent it from later becoming open with tubercle bacilli in the sputum and therefore dangerously communicable. While tuberculosis is decreasing in the adult, it is not doing so in children. On the contrary, at the ages of from 5 to 10 and from 10 to 15 years tuberculosis has increased, and why? Because the modern anti-tuberculosis measures have been devoted more especially to adult life and not to children. The mortality rate has been progressively decreasing during the years of active adult life, the same result has not occurred, or only to a very small extent in children.

Before considering prophylactic measures for the control of tuberculosis in children, I wish to elucidate the term "the pre-tuberculous type of child." I am afraid the average general practitioner will likely confuse these pre-tuberculous types with the simple malnutrition cases, and it is here I want to emphasize the ultimate importance of a distinction between the two.

When we stop to realize from what I have said before that from 40 to 50 per cent of all school children have become infected with the disease as verified by autopsy records, we see how necessary and important it becomes to be able to recognize and treat them before the disease actually develops.

The pre-tuberculous child is one in which the physical state of the child is such that it is only a stepping stone to active or open

tuberculosis. It is a state in which the child is either already infected and presenting no symptoms, or where there is a positive case of active tuberculosis in the immediate family irregardless of whether the child is already infected or not. In the children in families in which there is a tuberculosis patient, say a father or a mother, an infection is the more likely to have taken place in this child, and the younger the child, the more likely that infection has already taken place, because the younger, the more intimately do they come in contact with the tuberculosis patient in the family.

If I have a positive clinical history of a known exposure to active tuberculosis, I have good reason to anticipate that I shall obtain other confirmatory evidence. If an exposure to infection is likely to have occurred in the family, the child will most likely appear to be less robust, its appearance more delicate, and in a state of poor nutrition and development. I am guided not only by its weight but take into consideration also the body length as well as the size and massiveness of the bony frame. Next the physical examination of the pre-tubercular child will generally reveal the following:

1. Markedly underweight.
2. Enlarged glands in the neck, especially the deep posterior cervicals, axilla or groin, after having eliminated other causes.
3. Upper arms rather thin instead of round and full.
4. Chest—the upper third portion slight unequal expansion.
5. Tenderness on pressure over the upper dorsal vertebrae.
6. Breathing—a peculiar inspiratory harsh rasp especially near the area of second left interspace.
7. Enlarged bronchial glands determined by roentgen-ray, which should receive careful consideration.

8. The tuberculin test will confirm any previous finding of suspicious tuberculosis in the child.

Because a child is underweight or undernourished does not mean tuberculosis. Before I accept any apparent deficiency in weight or in the roundness or form as having a tuberculous basis I seek to eliminate other possible factors that may stand in causative relation, these being chiefly disturbances of the digestive functions originating in and more or less perpetuated by unsuitable or improper diet and indulgences, lack of attention to proper evacuations, etc. In addition I eliminate the sequel of proceeding diseases such as measles, scarlet fever, and rickets, which may have left functional disturbances or organic lesions, and farther think of malaria, hookworm and inherited syphilitic taint, all of which may account for deficiencies found. No other reasonable cause being discovered, the nutritive deficiency alone justifies us in suspecting tuberculosis, and if I have an underweight child that is known to have been exposed to infection, the probability is very strong indeed, that this deficiency stands in relation to tuberculosis.

If the chest examination is negative, the fact alone does not in any way eliminate a tuberculous infection and it does so the less, the younger the child is. The infection need as yet not have involved the lungs. A negative finding may also be due to the fact that the lesions are situated deeply or that any tubercles which are present have not yet caused structural alterations sufficiently large to be detected in the lungs. It is true that enlarged glands in the neck and under the jaws are found in infections of the head and scalp, diseased teeth, tonsil or ear diseases and nose infections but they return to a normal state as soon as the cause has disappeared. There are also other glandular diseases we must eliminate but in the absence of these causes we must suspect tuberculosis especially when these glands are situated deeply in the posterior part of the neck.

To prevent and control tuberculosis in children effectively our chief aim should be in the direction of natural immunization. The acquisition of a natural immunity to my mind is about the only real way we can expect to accomplish the end in view, rather than resorting to biological methods, the former being more or less permanent while the latter is only transitory. By natural immunity I mean the forbidding through a legislative act, the intermarriage of the tuberculous. Good seed will yield good fruit and children born of good seed will have a higher natural immunity than those of tuberculous parentage who will have a natural higher susceptibility. This situation to be governed by a law, the same as the syphilitic who is also governed by the same law as oftentimes there exists luetic background to a goodly number of tuberculous cases.

As tuberculosis has a national and international distribution, this resistance be gradually extended in the degree in which the non-resistant individuals are eliminated by death and in which more and more only the resistant ones marry and procreate children.

Inbreeding promotes the development of the acquired and transmitted immunity in places where it is forced upon the people by geographical factors, (islands, secluded valleys) since in such cases a greater resistance to tuberculosis is observable than in countries in which "panmixia" prevails. This is especially true in the case of the Jewish people among whom the tuberculous mortality is strikingly lower especially in childhood and the duration of the disease longer and frequently reach old age even if they become tuberculous.

The relative infrequency of tuberculosis in Jewish children, will bear me out in this, the acquired resistance being due to the influence of intermarriage and eugenic principles. The acute and fatal forms of the disease are relatively infrequent, being chronic, lives longer, resisting the disease better than does the tuberculous Gentile.

Next we will have to consider the pre-tuberculous child of school age. Here we should endeavor to find out which children are infected, especially those who live in families where there is a case of tuberculosis.

This can be done by compulsory notification instituting a drastic law requiring all physicians and hospitals to notify the Board of Health in every case, which to be investigated by the health nurse whose duty is to determine any children attending school from this family, that said nurse report the name and name of the school to the school board so that a special check up can be made through the medical inspectors, and the proper measures instituted to safeguard the health of that child.

All children found to have open or active tuberculosis to be removed and treated at once. All the pre-tuberculous cases to receive such care that will upbuild their resistance, by special diet, fresh air and exercise, and placed in open air schools for special hygienic attention. Healthy children in families where there is a case of tuberculosis should either be removed from the family or vice versa. All school teachers to have periodic lung examinations.

All school children should receive instructions in the preventions of tuberculosis.

Those suffering from bone joint or glandular tuberculosis, sent to the sea shore or receive physio-therapeutic treatment.

The above may appear too extensive for any community to undertake, but no labor or expense is too great in the protection of the child from tuberculosis from which it suffers so severely. Whatever we do for children is for the good of future generations and of highest importance to protect the child from tuberculosis, for the child of today is the man of tomorrow and surely has infinite and untold possibilities.

DISCUSSION

Dr. Durel (Covington, La.): It is about time for the medical profession to wake up to the necessity of enforcement measures in the prevention of tuberculosis. I read an article in *The Journal of the American Medical Association* on "Preventive Medicine as applied to Tuberculous Patients," by Linsly R. Williams, which shows how backwards we are, not only in this community, but throughout the United States. After an extensive survey he finds that 47 per cent of the cases that are seen by doctors and diagnosed as active tuberculosis have not even been told that they have tuberculosis, much less been advised to take any preventive measures. The article, which is in this week's issue of "*The Journal*" is well worth reading.

I would like to have a law passed, similar to the one in effect in Chicago, that every open case, or case of active tuberculosis be either separated from the smaller children, or the children be separated from the case. We have to come to this if we are to prevent the spread of the disease to the child by the adult. Tuberculosis, as we feel today, is a disease contracted in childhood. Sometimes we find children with tuberculosis of the adult type. We must remember that as long as there is a tuberculous adult in the home that there is a potential factor there.

Here, in New Orleans especially, we are very backwards and it is time for us to awaken to the realization that something must be done for the protection of the children against the spread of this disease. Sooner or later a radical law is going to be passed, so let us get together beforehand and think out something definite and practical. Not so long ago I pleaded with a tuberculous patient not to return home to her children. This woman had six little children to infect. Think of it! Yet I could not stop her—only a law would give me that authority—I could only plead with and advise her, stressing the importance of prevention.

Therefore, let us by all means have a law separating the source of the infection from the non-tuberculous individual.

Dr. E. D. Fenner: I am not going to discuss tuberculosis in children. What I want to say in all earnestness is that the last thing we want is another law about anything—we have too many laws now. I certainly do not advocate separating a sick mother from her offspring; we should leave the mother with the child. Why this excessive paternalism? It is the curse of the country today. The schools are now telling the parents what to do, so I hope that we will not attempt to do anything that will further interfere with the liberty of the people.

CASE REPORTS AND CLINICAL SUGGESTIONS

MILD TYPHUS EXANTHEMATICUS*

(Brill's Disease)

WITH REPORT OF CASE

WILLIAM COLBY RUCKER, M. D.,†

NEW ORLEANS.

The following case of typhus exanthematicus is presented to the Society for the purpose of signalizing the fact that this disease has appeared in the State of Louisiana. So far as I know, this is the first case which has been diagnosed in this State.

Maxcy,¹ writing on the distribution of endemic typhus (Brill's disease) in the United States, prophesied the appearance of the disease in Louisiana in the following words: "Along the Gulf coast, it occurs in Tampa, Pensacola and Mobile. No reports have been received of its occurrence at Gulfport, Miss., or at New Orleans, La., nor indeed from any locality in these two states. Perhaps further investigation will show that the freedom of these two states is apparent rather than real."

Typhus exanthematicus has been called by various names: Spotted, putrid, camp, jail, hospital and ship fever. These are descriptive of the eruption, the odor of the patients and the places in which it has most frequently occurred. The etiology of typhus is as yet undetermined. The *Rickettsia prowazeki*, Plotz's bacillus and other organisms have been brought forward as casual agents but have not received final acceptance. It is known, however, that the disease is infectious and that the infectious agents is a living body which is present in the peripheral blood of persons having the disease. This being the case, it is easy to see how certain suctorial insects, notably

the louse, may act as the agents of vection. From the viewpoint of epidemiology, this is extremely important, as are also the facts that the incubation period is, as a rule, from 12 to 14 days and that the disease confers an immunity against subsequent attacks. In those countries in which lousiness is not uncommon, the disease is ordinarily transmitted by the *Pediculus humanus var. corporis*, although Goldberger and Anderson showed that the *Pediculus humanus var. capitis* may also act as a vector. *Phthirus pubis* and *Cimex lectularis* must be regarded as potential carriers, although they have not yet been definitely incriminated. That there exist other and as yet unknown routes for the passage of the infection from the sick to the well, there can be no doubt, since typhus fever has been reported in localities and among people who are louse-free.

The text-book description of a typical case of typhus fever is presented here for comparison with that of the atypical mild type which has been found by Maxcy and other observers in the United States and named mild endemic typhus.

The disease begins abruptly with intense frontal headache and fever (103-105°F), pain in the back and lower extremities, extreme prostration and dusky suffused facies with dull, apathetic expression. The tongue is dry and coated. There is constipation. There may be persistent vomiting; the patient may be actively delirious or very lethargic. The conjunctival mucous membranes are congested. Not earlier than the third day or later than the seventh, there appears on the trunk and extremities a macular erythema sometimes preceded and accompanied by a diffuse blush or dusky subcuticular mottling which looks as though it were seen through a piece of ground glass. Within two or three days, blood extravasates into these lesions, first, as minute petechiae which tend to coalesce and become ecchymotic. The degree of

*Read before the Orleans Parish Medical Society, March 25, 1929.

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(1)Public Health Reports, Nov. 23, 1928, pps. 3084-3095.

ecchymosis is a fair prognostic criterion. With this rash, the initial symptoms increase. The patient may pass into stupor or acute mania. This phase resembles the third week of typhoid fever. At the end of the first week, the temperature reaches its maximum. Morning remissions begin which become greater and are followed by evening remissions, the normal being reached at the end of the second week or shortly thereafter.

This is a typical picture. A mild form of the disease was described by Brill in New York in 1910. Following this, Brill's disease was reported in the following order in the years 1910, 1911, 1912 and 1913 from Brooklyn, Chicago, Milwaukee, Washington, D. C., Atlanta, Ga., Boston, Petersburg, Va., Philadelphia, Memphis and Toledo, Ohio. Up to date, endemic typhus has been reported from Alabama, California, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Michigan, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Virginia; in other words, in from 22 states and the District of Columbia. Mild endemic typhus probably represents an infection which has, in some way, been attenuated. Its mortality is practically zero, the duration of the disease is shortened, all of its symptoms are diminished and complications are uncommon. In Mexico, there is an endemic disease called "tabardillo" which, at times, becomes epidemic. This was shown to be identical with typhus by Anderson and Goldberger and several other American workers. It is not at all improbable that the disease was originally introduced into Texas from this focus. It is not beyond probability that cases occurring in northern seaports may be a residuum of the infection which was introduced into the United States by the great flood of immigrants from Ireland in the early part of the nineteenth century but the origin of the disease in the interior of the country and

in the Southern States remains unsolved. Another point which remains to be elucidated is the relative infrequency of the disease in negroes.

The diagnosis of typhus fever has been made easier and more accurate by the introduction of the Weil-Felix reaction. This is an empiric laboratory test and consists in the agglutination of the *Bacillus proteus* X-19 with the patient's serum. It develops usually in the second week of the disease but has been found as early as the fourth day. When agglutinations occur in dilutions greater than 1:50, they are read as positive. Agglutination with much higher dilutions are found after the temperature becomes normal.

REPORT OF CASE

H. D. S., white male, aged 49 years, employee of the U. S. Marine Hospital, resident of New Orleans 8 years. About two weeks before his illness commenced, he had visited a family in Buras, La.; several members of the family were ill at the time. An investigation there and in this city for any possible contact cases of typhoid or typhus brought no positive results. The patient has never been lousy. There is no evidence of exposure to lice prior to his illness.

About the seventh of January he began to suffer with headache and fever. He treated himself with aspirin and relieved the headache but the temperature continued. He was admitted to the hospital on January 21. He was dull and apathetic and spoke slowly and with a decided slur. For one week his temperature ranged from 101° to 104° and his pulse from 100 to 120. During the next four days both fell to normal by lysis. Physical examination showed a coated tongue, palpable spleen and a dull red, maculo-papular, pin-head to pea-sized eruption over entire body, face, neck and extremities. He was put on typhoid precautions and treated as a typhoid. His recovery was prompt and complete without complications or sequelae. Immediately following the return of his temperature to normal, he was much elevated mentally, very garrulous and laughing with little provocation. This soon passed.

Three blood culture were negative for typhoid and para-typhoid. Two Widal tests showed no agglutination for typhoid and para-typhoid A and partial agglutination 1/40 and 1/80 for para-typhoid B. He gave no history of typhoid but had been vaccinated against it 18 months pre-

viously. Differential counts showed leukopenia (4200). No agglutination with *B. melitensis* abortus or tularemia.

On February 7 his blood agglutinated *B. proteus* X-19 in a dilution of 1-640. This fact, the negative typhoid and para-typhoid cultures, negative Widal's, the character and distribution of the eruption, the onset with persistent headache with no abdominal symptoms and the severe accompanying conjunctivitis, warranted the diagnosis of typhus.

Serum from this patient was sent to the Hygienic Laboratory, Washington, D. C., which reported positive reactions with *Bacillus proteus* H X₁₉ up to 5120 and with *Bacillus proteus* O

X₁₉ up to 2560. Saline suspensions showed no clumping. Normal serum against all suspensions showed no clumping above 1:40.

CONCLUSIONS

1. Mild endemic typhus fever has appeared in the State of Louisiana.
2. In cases resembling typhoid and paratyphoid but giving negative Widal reactions and negative cultural tests, typhus fever should always be considered.
3. The Weil-Felix reaction is an accurate diagnostic measure.

THE DECLINE IN THE AVERAGE LENGTH OF LIFE—To paraphrase the words of contemporary humorists, all that I know is what the various statistical data tells me, but, to me, the whole picture, from our earliest records in 1890 to the present time, points consistently and inevitably to a future of a declining average length of life until the American adult wakes up to the fact that the odds are at present heavily against his living as long as his father or grandfather. Some will say—and no doubt truly—that it is all a natural consequence of the great drift to the cities. Others will go farther and say life has become too fast and strenuous and that we do not know as yet how to adjust ourselves to such a life. To the medical authorities the whole problem will loom as one of relieving the strain upon the heart. But little will be accomplished until the American adult himself is duly informed and made to realize that he is in the midst of a decidedly losing fight and that the situation will continue until he applies himself energetically to be superior to his environment. Moreover, each adult must fight his own individual battle, since he usually brooks no

interference with his own individual mode of living. Medical authorities and scientists can be depended upon to care for the children and their diseases, but they have little or no chance to interfere with the lives of adults.

It truly looks as if it is going to be a losing fight for some time to come, for, although some adults are making a commendable effort to live sane lives, the vast majority seem very indifferent and many give apparently no thought whatever to habits which they clearly know they could easily discard. There is surely no worse influence than that wielded by well-meaning authorities who go around airing their ill-founded beliefs that all is going well and that before long everybody is going to be living seventy-five to a hundred years!

The presence recurrence of the "flu" promises to obscure the issue, not only by a further abnormal decline but even by the later reaction or recovery which is pretty sure to occur and which is very apt to produce a false impression of security and health improvement.—Forsyth, C. H.: *Science*, 70:85, 1925.

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NOSTRUMS AND PATENT MEDICINES

A rather cursory glance at the evening papers, as they now are appearing in the City of New Orleans, shows that they contain a considerable number of advertisements of patent and proprietary medicines. A more detailed investigation proves that not only are there many of these advertisements, but also that some of the most blatant and outrageous announcements of secret nostrums are appearing daily, or almost daily. In the pages of these presumed reputable papers are found such advertisements as S. S. S., originally put on the market as a cure of syphilis, but now

toned down to a cure of the external manifestations of blood disorders. Wine of Cardui, which at one time was supposed to do anything and everything for the ailing woman, is of course represented. This alcoholic preparation of unknown ingredients is certainly a good pickup and substitute for the old-fashioned pre-Volstead liquor, but as a cure-all for women's complaints is valueless. Ironized Yeast, whatever that may be, is guaranteed to build up the weight in a few weeks or you pay nothing according to the advertisement. Hay fever is relieved with Dr. Platt's Rinex or the money is returned. In conjunction with the frequency with which patent medicines are wont to offer to return the money if the goods are not what they are described to be, one wonders how legitimate manufacturing concerns would succeed if they did not have more faith in their products than do these quacks. Black-draught, C 2223, 666, Andes, not to forget Carter's little liver pills or the more modern Calotabs offer further advertisement relief to the sufferer, who is willing to put into his stomach drugs of unknown quantity, quality and potency, if any of these preparations are potent, but who would no more think of buying a watch or an automobile without fairly thorough investigation than he would try to fly to the moon.

It is not only the poor and the ignorant who suffer as a result of taking patent medicines of unknown substances for undiagnosed diseases, but it is also the man of presumed intelligence who reads and believes. The most ethical of the newspaper profession appreciate that they have a duty to protect their readers. Sad to relate the high standard of the average professional newspaper man is often nullified by the action of those who are connected with the business side of the paper. It does not seem too much to ask, however, of the business individual that he should be governed by the same high standards that professional men are wont to observe.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Attention is called to the communication of Ex-President Herold in another section of the Journal. Dr. Herold discusses the need of a full representation of representatives of the Louisiana State Medical Society to the American Medical Association. It certainly seems remarkable that a great state with an active medical association such as we have here in Louisiana cannot get men to represent it at the annual convention of the constituent state medical societies. If the State of Louisiana wishes to have taxation without representation it can do it merely by selecting delegates and alternates who will not accept their election as a serious obligation to carry out the duties which they were chosen to perform.

The prestige of a delegate at this annual meeting often depends on his knowledge of the details of the administration of the association and of his personal acquaintance with other delegates, many of whom have been re-elected over a considerable period of time and who wield considerable power. The delegates from these other states take their duties seriously; they believe they have a moral obligation to those who elected them; and they function regularly at each and every meeting of the House of Delegates. Therefore, criticism should not be made by us that other states have more influence than do we. The obvious reasons are given. If the medical profession of the State of Louisiana wish to hold a position in the governing body of our national organization, commensurate with their undoubted importance in American medicine, delegates should be elected who will attend the annual meeting of the House of Delegates. That they may familiarize

themselves with the workings of the association and become acquainted with other delegates the term of office should be for a period of some years, either by tacit agreement or by constitutional amendment.

Dr. Herold virtually suggests that the elected delegates and alternates should pledge themselves to attend the national meeting. This suggestion should be given due weight by the House of Delegates of the Louisiana State Medical Society when nominations are made for the positions of delegate and alternate to the American Medical Association.

PREVENTION OF DIABETIC DEATHS

Dr. Elliott Joslin, than whom there is no greater authority on diabetes nor a more enthusiastic advocate of preventive medicine, is endeavoring by a systematic effort, in presenting the subject of the treatment of diabetic coma to the medical profession, to forestall this acute, preventable and curable complication of diabetes. In pursuance of this purpose he is broadcasting through the national and state medical journals what should be done to stop deaths from coma, which is responsible for approximately 40 per cent of those who die from the disease.

Joslin says that diabetic coma should be prevented and usually may be cured. Diabetics go into coma because they break their diets and overeat; they neglect infections, whether local as an abscess or general as a respiratory tract infection, because they do not appreciate the importance of examining the urine frequently and regularly at such times; and they stop their insulin because they are not eating.

As soon as the diabetic feels ill or sick he should immediately call his physician,

go to bed, take a hot drink every hour, take an enema, keep warm, get some one to take care of him. These rules should be definitely instilled in his mind by the physician in care of the diabetic.

If coma exists insulin should be given every half hour in 10 to 40 unit doses. If given intravenously it should be also administered subcutaneously at the same time. Normal salt solution, 1000 c.c., should be given by hypodermoclyses as soon as the insulin has been injected, in order to overcome dehydration. The heart should be stimulated with caffein sodio-benzoate, 7½ grains every hour for three or four doses. The stomach should be washed out gently and then ginger ale, the juice of 2 or 3 oranges or weak gruels should be given.

The Journal is thoroughly in sympathy with Dr. Joslin's efforts to prevent diabetic coma. While it is true that these directions have been published before repeatedly, nevertheless the mere fact that there are so many patients dying of diabetic coma would indicate that there are still a considerable number of physicians who are not "insulin-minded", and until the facts of the case are appreciated by such men by repeated and persistent hammering at the treatment of the condition, only then will there be controlled this, the most important complication of a disease which is present in about one in every 150 of our population.

CLIMATE AND HEALTH.

The subject of climatology has been an interesting one to the medical man in the recent years. He knows that not only does civilization rise and fall according to variations in climate, but he knows full well that climate affects the health. The

climate in which man works most efficient is that in which there is a daily temperature averaging 64°F., and with a relative humidity of about 60 per cent. Marked daily fluctuations and yearly changes are conducive to increased energy and greater efficiency. That prolonged spells of hot humid weather not only reduce mental and bodily activity, but also produce retrograde changes in individuals with chronic diseases and lower the general feeling of well being in a normal individual, is well known. Mills describes a syndrome which occurs in patients who have been exposed to a prolonged period of moist heat. These patients complain of low blood pressure, weakness, loss of weight, dizziness, hypermotility of the gastro-enteric tract with either spastic constipation or watery diarrhea and spasm of the various sphincters. Epigastric pains, urticaria and increased pigmentation of the skin are seen at times. In women, menstrual disturbances are frequent, especially dysmenorrhea and menorrhagia.

He assumes that this clinical disturbance is due to a reduction in the functional activity of the adrenal glands. On the basis of this assumption he has given these patients, with rather remarkable results, 100 mgm. of adrenalin in 30 per cent glucose solution a half hour before each meal. In spite of the fact that adrenalin is not presumed to be absorbed by mouth, Mills maintains that on this therapy the patients improved very remarkably.

This suggestion of Mills concerning the treatment of the individual suffering from certain amount of heat fatigue might be applicable to some of the patients that are seen in Southern Louisiana during the course of the rather prolonged and at times particularly humid summers.

HOSPITAL STAFF TRANSACTIONS

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL STAFF MEETING.

AUGUST 10, 1929.

Abstract—Malunion of Fracture of Greater Tuberosity of the Humerus With Blocking of Joint; Open Operation, Kocher Approach, and Replacement of Fragments.—Dr. H. H. Johnston.

Patient—White, male, age 60, admitted to hospital July 9, 1929.

Complaint—Pain and swelling of right shoulder and inability to use right arm.

History of Present Illness—Four months before admission, fell from a scaffold, a distance of 12 feet, striking upon right shoulder. Severe pain with immediate loss of function. Condition was diagnosed by physician as dislocation of shoulder and under a general anesthetic, reduction was said to have been performed. Following pain was less with function about the same. Two weeks later sent to another physician for roentgen-ray examination and a diagnosis of fracture of the head of the humerus was made. Reduction was attempted and arm held high in an elevated position for six weeks in a plaster cast. Patient states that function did not improve. Since then there has been no appreciable change in condition.

Past History—Fracture of right seventh rib in 1924 in automobile accident. No serious illnesses; no operations.

Family History—Not relevant to present condition.

Physical Examination—Temp. 99°F.; Pulse 86; Resp. 20. Patient well developed and robust; not apparently ill. All teeth have been extracted. Moderate atrophy of right supra-spinatus, infraspinatus, teres minor and deltoid muscles. Considerable swelling about right shoulder joint and head of humerus appears abnormally broad antero-posteriorly. Slight crepitus on moving arm. External rotation impossible but internal rotation apparently not impaired. Abduction limited to 20 degrees.

Other physical examination essentially not remarkable.

Roentgen-ray shows a comminuted fracture of head of humerus involving greater tuberosity, with dislocation.

Urine shows—Sp. Gr. 1.020; slight trace of albumin; rare hyaline and granular casts.

Blood—Hb. 72 per cent; leukocytes 6,400; differential count, small lymphocytes, 39 per cent; large mononuclears, 7; polymorph. neutrophiles, 50; eosinophiles, 4. No malaria found. Wassermann and Kahn tests negative.

Course—Patient suffered continually with pain and open reduction was decided upon two days after admission. Under general anesthesia, posterior exposure of shoulder joint was made by the Kocher osteo-cutaneous flap method. Joint

was opened by chiseling loose the greater tuberosity from its abnormal point of fixation. Head of humerus was made smooth by chiseling off irregularities of callus. The greater tuberosity was approximated to its normal position on the arm by abducting and externally rotating the arm. The tuberosity was held in place by drilling shaft and wiring. A large bone screw was also used. Spinous process of scapula was wired in place, wound closed, and plaster cast applied with humerus abducted and externally rotated.

The day following operation temperature was 101°F., and a window was cut in cast and wound examined. It was not draining, however, and showed no evidence of infection. Temperature gradually subsided and was normal at time of discharge, 14 days after admission.

Result—There has been no recurrence of pain since operation. Abduction to about 80 degrees is possible and there is much improvement in external rotation.

Discussion by G. M. Street, J. P. O'Leary, S. W. Johnston, and J. A. K. Birchett, Jr.

Abstract—Addison's Disease.—Dr. J. A. K. Birchett, Jr.

Patient—White, male, age 41, carpenter.

Complaint—For past six months has had general weakness, no energy, tires easily, vague pains in abdomen associated with constipation. Dull pain in gall bladder region and pain in back, worst in region of right kidney. Has noticed that in last three or four months, skin has gradually become dark colored, this being attributed to being much in the sun. Has fever almost constantly but never more than 99.6°F.

Past History—Has had pain in gall bladder region and back for several years. Appendix removed six years ago; complicated by phlebitis. Gall bladder drained in 1926 with no relief from pain and digestive disturbances, which have been present for past six years. Tonsils have been removed. Greatly disturbed by constipation. Feels dyspneic on exertion with rapid heart action.

Genito-Urinary history negative.

Family History—Negative.

Physical Examination—Temp. 99.4°F.; pulse 100; respiration 18; blood pressure 90/70. Large, well-developed and well nourished; skin very dark, copper color. Liver slightly enlarged and tender and marked tenderness over right kidney. Physical examination otherwise negative.

Urine—Large trace of albumin; some hyaline, rare finely granular casts; some leucocytes; some abnormal red blood globules.

Blood—Leukocytes, 9,800; Differential leukocyte count, small lymphocytes, 52 per cent; large mononuclears, 3; polymorph. neutrophiles, 44; polymorph. eosinophiles, 1. No malaria found. Wassermann and Kahn tests negative.

Discussion—Diagnosis of Addison's disease was made because of pigmentation, asthenia, and evidence of disturbance in region of right kidney.

The chief symptoms of Addison's disease are mentioned briefly because they are so clearly brought out in the present case: (1) Pigmentation of skin. There are other diseases which may have characteristic pigmentation of the skin and this sign cannot be of diagnostic importance without other signs also present. (2) Gastro-intestinal symptoms,—constipation and gas. This is probably due to inhibited peristaltic movements through disturbance of the sympath-

tic system. (3) Asthenia. This was clearly noted in the present patient—muscular weakness, tachycardia, irregular heart action at times. (4) Unusually low blood pressure and pain in the back. Anemia is not a usual sign although Addison stated it as one of the cardinal signs.

Course—Patient has improved on adrenalin, 30 drops by rectum three times a day, and tonics. Blood pressure has at times been as high as 120/80.

Discussed by Drs. A. Street, J. P. O'Leary, and S. W. Johnston.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

FELLOWSHIP IN RADIOLOGY IN THE CHARITY HOSPITAL NEW ORLEANS.

Dr. Amedee Granger, Director of the Roentgen-Ray Department of the Charity Hospital announces that the Board of Administrators of that Institution has established a Fellowship in Radiology.

The Fellows are members of the House Staff, ranking between the Internes and the House Physicians and Surgeons, and at the completion of their year's work will receive a certificate of Fellowship and become eligible for the position of Assistant Radiologist.

Here is a splendid opportunity for graduates of Class A Medical Colleges to obtain thorough training in one of the newest and most important Medical Specialties. The Hospital is one of the largest in this country and the number and variety of clinical material is abundant as shown by the fact that more than 35,000 radiographs are made annually.

BANQUET TO DR. KNOWLTON.

On the night of July 30, the St. Landry Parish Medical Society tendered a banquet to Dr. and Mrs. W. W. Knowlton just before their departure for their Massachusetts home. Until his resignation which took effect some two weeks ago, Dr. Knowlton was the Director of St. Landry Parish Health Unit. It has been a matter of common knowledge, that under his active and wise administration, public health matters have improved to a great extent, and the medical profession of St. Landry sincerely regret the Doctor's departure. We are consoled, however, by the fact that he has been replaced by a sterling young sanitarian who has just arrived from the University of Georgia to take up his duties as Director of the Health Unit.

The banquet given to Dr. and Mrs. Knowlton was attended by about one-half of the Physicians of the Parish, who were happily accompanied by their wives, and all agreed that a most enjoyable evening had been spent.

Dr. L. J. Bienvenue, President of the Society, in a very interesting manner, reviewed its history, and Dr. A. B. Pavy spoke along the lines of public health work, stressing the necessity of close cooperation between the health officials of the State and the various Parishes, and the practicing physicians. Dr. S. B. Wolff, one of the prominent young physicians of this City acted as Toastmaster, and his remarks were well received. Other interesting talks were made by Drs. F. J. Mayer, and George R. Berdin. Dr. Knowlton very graciously and modestly spoke of his work as Director of the Health Unit, and sincerely wished the incoming Director, Dr. Victor Roule, every measure of success in the prosecution of health work in St. Landry Parish.

W. R. LASTRAPES, M. D.,
Sec.-Treas. St. Landry Parish Med. Society.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT PORTLAND.

At the 80th Annual Session of the American Medical Association in Portland, July 8-12, judging from the abstract of the Proceedings of the House of Delegates, there was no particular outstanding bit of constructive legislation. However, rather important resolutions were proposed and passed, such as the question of medical expert opinion, the standards of physical fitness of automobile operators, the safety of milk for human consumption, the practice of medicine by corporations, the proposed new building and authorization to increase the subscription prize of the Journal to eight dollars. At the conclusion of the meeting the following officers were elected:

President-Elect—William Gerry Morgan, Washington, D. C.

Vice-President—Ernest A. Sommer, Portland, Oregon.

Secretary—Olin West, Chicago.

Treasurer—Austin A. Hayden, Chicago.

Speaker of the House of Delegates—F. C. Warnshuis, Grand Rapids, Michigan.

Vice-Speaker of the House of Delegates—Albert

E. Bulson, Fort Wayne, Indiana.

Member of the Board of Trustees—D. Chester Brown, Danbury, Connecticut, re-elected.

Member of the Board of Trustees—Allen H. Bunce, Atlanta, Georgia, to succeed E. H. Cary, Dallas, Texas.

The President, Dr. M. L. Harris, made the following nominations for standing committees:

Judicial Council—James B. Herrick, Chicago.

Council on Medical Education and Hospitals—M. W. Ireland, Surgeon General, U. S. Army; James S. McLester, Birmingham, Alabama.

Council on Scientific Assembly—Lewis H. McKinnie, Colorado Springs, Colorado.

These nominations by the President were confirmed by the House of Delegates.

HEALTH NEWS OF NEW ORLEANS.

During the week ending August 10, 1929, there were 153 deaths in the City of New Orleans, 82 of whom were among the white population and 71 the colored. Fifteen children under one year of age died during the week, 11 of whom were colored, with a death rate of 18.5. During the corresponding week last year there were 150 deaths in the city with the death rate of 18.3, approximately the same figures as this year.

DR. AMEDEE GRANGER AGAIN HONORED.

Dr. Granger, head of the department of Radiology of the Graduate School of Medicine of the Tulane University of Louisiana, and director of the X-ray department of the Charity Hospital, has received, through the consul-general of Belgium, the citation conferring upon him the distinction of Knight of the Order of the Crown. This distinction is next to the highest conferred by Belgium and is ranked only by the Order of Leopold, outranking the Order of Leopold II.

This honor was bestowed upon Dr. Granger in recognition of his philanthropy in presenting to the Kingdom of Belgium the unrestricted use of his valuable apparatus for the localization of foreign bodies with the X-ray. The apparatus proved of enormous service during the World War.

INTER-STATE POSTGRADUATE MEDICAL MEETING.

The program of the International Assembly of the Inter-State Postgraduate Medical Association has been recently received. The meeting is to be held in Detroit the week of October 21, and a long list of distinguished guests of the association will present clinics. Without enumerating the entire number it is interesting to note that the following men will present some phase of medicine, surgery or specialties:

Dr. Irwin Abell, Dr. Lewellys F. Barker, Dr. Arthur Dean Bevan, Dr. Joseph C. Bloodgood,

Dr. Harlow H. Brooks, Sir Bruce Bruce-Porter, Dr. Henry A. Christian, Sir Frank Colyer, Dr. George W. Crile, Dr. Elliott C. Cutler, Dr. John B. Deaver, Dr. Joseph B. De Lee, Dr. Charles A. Elliott, Dr. John F. Erdmann, Dr. John M. T. Finney, Dr. Charles H. Frazier, Sir Henry J. Gauvain, Dr. Elliott P. Joslin, Dr. E. Starr Judd, Dr. Dean Lewis, Dr. Fielding O. Lewis, Dr. McKim Marriott, Dr. Charles H. Mayo, Dr. William J. Mayo, Dr. C. Jeff Miller, Dr. Henry K. Pancoast, Dr. John O. Polak, Dr. William C. Quinby, Dr. Leonard G. Rowntree, Dr. Aldred S. Warthin, Dr. Rollin T. Woodyatt.

At a recent meeting of the International Congress of Surgery held in Warsaw, Poland, Dr. Rudolph Matas was elected one of the Honorary Presidents of the Association.

Telephone cards with instructions for obtaining nurses for the sick have been installed in New Orleans' fire and police departments by the Child Welfare Association of the Community Chest. The Association offers nursing service to working people and their children in accordance with ability to pay. Since 1917 it has enrolled 114 firemen's children and eighty-four policemen's children, and the city's public guardians have been active in advertising the benefits of its work.

Dr. J. L. McElroy, following several months given to visiting medical centers of Europe, has become superintendent of the hospitals of the Medical College of Virginia, Richmond. These are the Memorial, the Dooley, and the St. Philip Hospitals. The Crippled Children's Hospital is affiliated as the orthopedic department for white children.

Dr. Leslie and his wife, Dr. Murray-Leslie, formerly an interne at the Charity Hospital, will leave shortly for El Paso, Texas, where they will settle permanently.

UNITED STATES CIVIL SERVICE EXAMINATIONS.

Physician, \$3,800 a Year

Associate Physician, \$3,200 a Year

United States Veterans' Bureau

Applications will be rated as received by the U. S. Civil Service Commission at Washington, D. C., until December 30, 1929.

The United States Civil Service Commission announces open competitive examinations for the positions named above. Vacancies in the United States Veterans' Bureau for duty throughout the United States, and in positions requiring similar qualifications, will be filled from these examinations, unless it is found in the interest of the

service to fill any vacancy by reinstatement, transfer, or promotion.

CORRESPONDENCE.

Shreveport, La., August 12, 1929.

To the Editor:

At the recent meeting of the American Medical Association in Portland, I had the honor and pleasure, through the courtesy of the executive officers of our state society, of representing Louisiana in the house of delegates, all of our regularly elected delegates and alternates being absent. I understand that a similar situation prevailed at the Minneapolis session, last year, you being the bearer of the alternate-proxy on that occasion.

I desire to call this matter to the attention of our membership and, especially, those who compose our house of delegates. The matter was brought up before the house at Portland and the Speaker interpreted the rules to mean that only those duly *elected* could sit, and ruled, therefore, that, in the future, no *appointed* proxies will be recognized. At the Baton Rouge session of the L. S. M. S., I decried the practice of some members in accepting positions and then not serving; I realize that, occasionally, circumstances arise which prevent attendance of doctors at far-away meetings; I realize, also, that a busy practitioner cannot get away, *at any time*, with ease—he must always make sacrifices. But, without reflecting upon anyone, personally, I again say what I said at Baton Rouge and add that it shows a lack of interest in organized medicine for our four duly elected delegates and alternates to be unanimously absent from two successive sessions of the American Medical Association.

In view of the above ruling of the Speaker, which was sustained by the House of Delegates, I would suggest that, in the future, in order to have our state represented at the national meeting, those delegates and alternates, who are not reasonably sure of attending, resign to our house of delegates, at the meeting of the state society, thereby enabling us to elect men who plan to attend.

Sincerely yours,

ARTHUR A. HEROLD.

July 9, 1929.

New Orleans Medical and Surgical Journal,
1551 Canal St.,
New Orleans, La.

Dear Sirs:

The Executive Council of the American Association for the Study of Goiter has instructed me to inform you that a prize of three hundred dollars (\$300.00) and a medal of honor will be awarded by the Association to the author of the best essay based upon original research work on any phase of goiter, presented at their annual

meeting at Seattle, Washington, in September, 1930.

Competing manuscripts must be in the hands of the Corresponding Secretary by July 4, 1930, so that the award committee will have sufficient time to thoroughly examine all data before making the award.

Full particulars of other regulations governing details of the offer will be furnished on application.

The American Association for the Study of Goiter hopes this offer will stimulate valuable research work on the many phases of goiter, especially on its basic cause.

Yours very sincerely,

J. R. YOUNG,
Corresponding Secretary.

THE SOUTHERN FARMER'S BURDEN.

DR. P. M. PAYNE,

Director, East Carroll Parish Health Unit.

I.

See yon old chap with bended form,
Weighted down with a triple load,
The cotton bale, the hired man,
The mosquito a pois'nous goad.

II.

A single burden he can stand,
Ask any man who tills the soil;
A double burden wears him out,
Makes him unfit for proper toil.

III.

But further add malaria,
The southern farmer's greatest foe,
This super-burden is enough,
To work him pit'ous, direful woe.

IV.

The shaking chill with fever high,
His blood reduces to a state
Where his resistance cannot stand
The withering strain of such a fate.

V.

"Dumb chills," "swamp fever," "ague-cake,"
Malaria the self-same thing;
In man's blood stream a parasite,
Plac'd there by a mosquito's sting.

VI.

So screen your house, protect yourself,
Against this venom'd insect pest,
You'll sleep at night, next morning rise
Renew'd in strength by peaceful rest.

VII.

Then chill tonics and doctor's bills
No longer must you yearly meet,
But when your crop is harvested
You'll find yourself on both your feet.

VIII.

Your wife, your child, the hired man
Freed from this course you'll soon lift up
Your head and smile as other men,
You'll cast away the bitter cup.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

Dr. Temple Ainsworth, formerly resident surgeon at the South Mississippi Charity Hospital, Laurel, has resigned to locate in Jackson, where he will be associated with Dr. Frank VanAlstine in genito-urinary work.

Dr. William F. Hand, State Line, is now resident surgeon at the South Mississippi Charity Hospital, Laurel.

Dr. Dana V. Clark, representative of the American College of Surgeons, recently inspected the South Mississippi Charity Hospital and was very complimentary in his report. He made only three minor recommendations which concerned the keeping of records.

Improvements and installations of new equipment recently completed at the South Mississippi Charity Hospital include a new brick waiting room for white visitors, a new brick waiting room for colored visitors, new brick sanitary dairy barn, three new Potter fire escapes, two large electric refrigerators, steel filing cabinet for roentgen-ray films, and the plastering and painting of the entire main building.

Dr. F. L. Bott, secretary of the Holmes County Medical Society, reports the following:

The Holmes County Medical Society met at the Court house in Lexington on July 13. Those present and taking part in the discussions were Drs. J. S. Rosamond, West, President; J. J. Kazar, Tehula; R. C. Elmore, Durant, and F. L. Bott, Lexington. Two new members were elected to membership in the Society—Dr. J. F. Howell and Dr. T. P. Haney, both of Lexington.

It is interesting to note that Holmes County has more members than any single-county society in the State, having 15 members and going good. DeSoto County comes next with 13. We have the banner county society of Mississippi. We banquet our members in October and expect a great meeting.

Dr. T. P. Haney read a paper at our last meeting.

Dr. A. M. Doty of Lexington has been in California for his health since April.

Dr. W. K. Stowers, secretary of the Homochitto Valley Medical Society, reports:

The regular quarterly meeting of the Homochitto Valley Medical Society was held in Natchez on July 12. We had a good attendance and en-

joyed a very instructive paper on "Glaucoma—Early Diagnosis as a Prevention of Blindness," by Dr. L. S. Gaudet. This paper was illustrated by lantern slides.

Dr. L. S. Gaudet has resumed his practice following an illness of one week's duration.

The following comes from Dr. D. J. Williams, secretary of the Harrison-Stone-Hancock County Medical Society:

The regular meeting of the Harrison-Stone-Hancock County Medical Society was held at the Elks Hall, Wednesday, August 7. The following interesting program was presented:

Tularemia—Dr. D. G. Rafferty, Pass Christian.

Undulant Fever—Dr. H. K. Tippin, Gulfport.

Following the presentation of these papers, there was an interesting discussion by those present. The local laboratories are prepared to make the necessary examinations for the diagnosis of these diseases.

The application of Dr. A. P. Smith of Bay St. Louis for membership in the Society was received and Dr. Smith was regularly elected.

CORRECTIONS.

In the list of chairmen of sections and committees of the Mississippi State Medical Association, published last month, the name of Dr. C. A. McWilliams, chairman of the Section on Eye, Ear, Nose and Throat, was inadvertently mis-spelled, and the names of Drs. I. W. Cooper, of Meridian, and D. W. Jones, of Jackson, were omitted from the Committee on Public Policy and Legislation. This committee consists of Drs. I. W. Cooper, D. W. Jones, and F. J. Underwood, of Jackson.

Dr. W. C. Watts of Drew is reported as suffering with undulant fever in the Baptist Hospital at Memphis. He has been in the hospital for a month.

Drs. L. H. Hightower, Itta Bena, S. D. Newell, Inverness, and R. C. Smith, Drew, attended the practitioners' review course at Vanderbilt University in June, and reported a fine course.

Dr. George T. Warren, of Brookhaven, spent a 30-day vacation trip in Texas and Colorado this summer.

The graduating exercises of the training school for nurses of the King's Daughters' Hospital of Brookhaven were held July 10, seven young ladies receiving diplomas. Mrs. I. L. Parsons, of Jackson, former State president of the King's Daughters, in an inspiring address emphasized the exalted nature and opportunity for service in the profession of nursing. Dr. W. H. Frizell, past-president of the Mississippi State Medical Association, presented the diplomas, and Dr. O. N. Arrington, past-president of the Tri-County Medical Society, presented the badges. Both Dr. Frizell and Dr. Arrington made short addresses to the graduates.

At the regular meeting of the Staff of the Vicksburg Sanitarium, special case reports were presented as follows:

Obstructing Carcinoma of the Descending Colon in a Young Man of Nineteen Years; Resection, Mikulicz Technic.—Dr. A. Street.

Discussed by Drs. G. M. Street, L. S. Lippincott, and J. P. O'Leary.

Addison's Disease—Dr. J. A. K. Birchett, Jr.

Discussed by Drs. A. Street, J. P. O'Leary, and S. W. Johnston.

Traumatic Myelitis—Dr. L. J. Clark.

Discussed by Drs. S. W. Johnston, J. P. O'Leary, and G. M. Street.

Malnutrition of Fracture of the Greater Tuberosity of the Humerous with Blocking of Joint; Open Operation, Kocher Approach, and Replacement of Tuberosity.—Dr. H. H. Johnston.

Discussed by Drs. G. M. Street, J. P. O'Leary, S. W. Johnston, and J. A. K. Birchett, Jr.

Dr. G. M. Street presented a report of the recent meeting of the American Medical Association at Portland, Oregon.

Selected radiographic studies were presented and discussed as follows: Enlarged Thymus, Before and Following Treatment; Pulmonary Tuberculosis; Carcinoma of Descending Colon; Cystic Bone Disease of Lower Jaw; Exostoses of Lower Extremity.

Pathological specimens were exhibited as follows: Adeno-carcinoma of Breast (4 cases) Tuberculosis of Testicle; Adeno-carcinoma of Colon.

Dr. M. J. Few, of Rolling Fork, is specializing in urology at the New York Post Graduate Medical School and Hospital for six months. He ex-

pects to complete the course December 31. Dr. Few writes: "I like it here very much and think this a wonderful school."

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held at the Y. M. C. A., Vicksburg, August 13. The following scientific program was presented:

Undulant Fever—Dr. H. H. Johnston.

Discussed by Drs. F. M. Smith, L. S. Lippincott, and discussion closed by Dr. Johnston.

Conservatism in Surgery—Dr. S. W. Johnston.

Discussed by Dr. A. Street, and discussion closed by Dr. Johnston.

Sinusitis in Children—Dr. E. H. Jones.

Discussed by Dr. A. Street, and discussion closed by Dr. Jones.

The Society is making plans for its annual meeting in December. The meetings of the last two years have been outstanding with guests present from several states and the meeting this year to be no exception. The program committee has announced as essayists Dr. C. C. Bass, of New Orleans, and Dr. James S. McLester, of Birmingham. Dr. H. A. Gamble, of Greenville, will make an official visit as president of the Mississippi State Medical Association and make an address at this meeting. The date has been set as Tuesday, December 10.

Dr. L. L. Minor, secretary of the DeSoto County Medical Society, writes: "We are looking forward with much pleasure to the 1930 meeting of our State Association at Vicksburg. Vicksburg is a fine convention city."

It is much regretted that no word has been received from Dr. I. W. Cooper, of Meridian, during the past month. In his letter of last month Dr. Cooper took such a pessimistic view of the future, that fears are felt for him. However, he may be on a vacation. It is hoped that news of the genial treasurer of the State Medical Association will be received before the next issue of the Journal. It is also regretted that we have no information of the present status of the race between Dr. Joe Green, of Richton, and Dr. L. L. McKinnon, of Hattiesburg, reported by Dr. C. C. Hightower, of Hattiesburg, last month. News of progress of contestants is expected soon.

VITAL STATISTICS.

No marriages or births concerning the physicians of Mississippi have been reported.

SOME HIGH LIGHTS IN MISSISSIPPI
MEDICAL HISTORY.*

(Continued)

The second meeting of the Mississippi State Medical Association was held in Jackson, April 20, 1869. Dr. A. B. Cabiniss was called to the chair and Dr. Ed. Lea, of Winona, was appointed secretary. Reorganization was effected by the election of Dr. E. T. Henry, of Vicksburg, president; Drs. Thomas D. Isom, of Oxford, E. G. Banks, of Clinton, S. V. D. Hill, of Macon, and William Compton, of Holly Springs, vice-presidents; Dr. Ed. Lea, recording secretary; Dr. M. S. Craft, corresponding secretary, and Dr. P. T. Bailey, of Jackson, treasurer.

Much important business was transacted at this meeting, which was really the beginning of the State Association. The constitution and by-laws of the former meeting were re-adopted with slight change.

The following were elected delegates to the American Medical Association, to meet in New

*Facts gathered from a History of the Mississippi State Medical Association, published in 1910.

PROBLEMS OF MECHANICAL REFRIGERATION.—Several deaths which have occurred recently in Chicago have been attributed to poisoning by methyl chloride which leaked from refrigerating systems. These have received wide publicity, and have caused apprehension, even among the users of refrigerating equipment entirely unlike that to which the fatalities have been attributed. It is the purpose of this statement, authorized jointly by the Public Health Service, the Bureau of Standards, and the Bureau of Mines, to state the essential facts regarding this danger and to relieve any undue anxiety in the minds of those possessing household refrigerating systems.

All refrigerating systems in practical use depend for their operation upon the repeated gasification and condensation (sometimes by dissolving or "absorbing" in another substance) of a material which is technically called a "refrigerant". In most cases the refrigerant is confined under pressure in the refrigerating machine, and if it escapes from the system, becomes a gas which mixes with the surrounding air.

For many years the gas ammonia was almost the only refrigerant used. For technical reasons, other refrigerants have more recently been introduced and are now extensively employed. Sulphur dioxide and methyl chloride are the most important of these.

Orleans: Drs. F. W. Dancy, S. B. Cutler, W. Y. Gadberry, M. S. Craft, Robert Kells, James R. Barnett, K. C. Devine, P. F. Whitehead, Ed. Lea, E. T. Henry, H. C. McLaurin, W. B. Williamson, C. B. Galloway, S. V. D. Hill, — Martin, T. D. Isom, F. Hughes, B. F. Ward, A. Thomas, J. S. Davis, L. Lipscomb, J. P. Moore, Gus Evans, J. G. Thornton, A. G. Mayers, J. M. Greene, A. S. Snell, A. H. Smith, Wirt Johnston, D. A. Kinchloe, — Lyle, — Harper, and J. J. McLean.

"On motion of Dr. Barnett, a committee was appointed to prepare an address to the medical profession of the State, urging the importance of speedy organization of county or local societies; and, on motion of Dr. Hill, a committee was appointed to prepare an address to the people of the State respecting the importance of a more perfect system of drainage upon plantations, with a view to as far as possible arresting the production of miasma, so fruitful as a source of grave forms of fever.

"Chairmen of committees were appointed, also, to report at the next meeting on important medical subjects. The Association adjourned to meet at Vicksburg on the first Monday in April, 1870."

None of the three refrigerants mentioned, ammonia, sulphur dioxide or methyl chloride, can be breathed with impunity, but none are violent poisons when breathed for a short time in low concentrations. If the same amount of the three substances is considered, methyl chloride is the least poisonous of the three; but because their physiological effects are quite different it is hard to make a quantitative comparison. Sulphur dioxide and ammonia both have strong odors which are easily recognized and are so irritating that no one is likely to breathe much of them if escape is possible. Methyl chloride has a slight and rather pleasant odor, which probably would not awaken a sleeping person and might not be recognized by one who was awake. To this fact is to be attributed any greater hazard from methyl chloride than from other commonly used refrigerants.

Most of the trouble attributed to methyl chloride has occurred in connection with multiple refrigerating systems installed in apartment houses in which a single compressor delivers the refrigerant through tubes to the refrigerators in the several apartments. A large majority of the individual household refrigerators of the motor driven ("electric") type now in use employ sulphur dioxide as the refrigerant. Nearly all, if not all, of the domestic refrigerators, the operation of which depends upon supply heat instead of mechanical compression, use ammonia.—*Health News of the U. S. Public Health Service.*

BOOK REVIEWS

Protozoology: A Manual for Medical Men: By John Gordon Thompson, M. A., M. B., Ch.B. and Andrew Robertson, M. B., Ch.B. New York. Wm. Wood and Co., 1929. pp. 376.

This beautifully printed and handsomely bound volume is a laboratory text in clinical protozoology. It is a written presentation of the high type of work in this important section of medical zoology which the authors give in their course in the London School of Hygiene and Tropical Medicine. All important aspects of human protozoology are considered in this manual and, in addition, the human spirochetes are also discussed. The work is well balanced, the textual illustrations are excellent and for the most part original. There are also four beautifully colored and scientifically accurate color plates, which add much to the attractiveness and value of the volume. The authors apologize for the scanty bibliography, actually less than three pages. Some of these are only of historical value. If twenty pages of references, covering the citations in the body of the manual, had been included the work would have had much greater value. In some instances, not many, proof has not been carefully read, as, for example, on pp. 225-226 one investigator's name has been spelled in three different ways. On the whole, however, these criticisms are offset by the outstanding merit of the work itself, and the reviewer could heartily recommend it to students were it not for the exorbitant change of \$11.00, or approximately three cents per page, which is twice as much as the student ought to have to pay for this sized manual.

ERNEST CARROLL FAUST, Ph.D.

A Surgical Diagnosis: By J. Levi Donhauser, A. B., M. D., F. A. C. S. New York. D. Appleton & Co., 1929. pp. 799.

As this book is essentially for medical students and hospital residents and as history taking is of such importance and value in the arrival at surgical conclusions, a considerable amount of space has been devoted to the proper methods of procedure, namely, the taking of a good history, a thorough examination of the patient, the proper use of laboratory methods and instruments of precision and, finally, a correct interpretation of the case from the facts ascertained. The student is also made to realize that laboratory methods and instruments of precision are only adjuncts and not always essential in arriving at a surgical diagnosis. This is timely and well taken for if we are to believe some of our contemporaries, no diagnosis can be made until the patient has been put through the gamut of laboratory tests.

The importance of visualizing the signs and symptoms along anatomical, physiological and pathological lines and not merely as so many ultimate facts is stressed throughout.

The illustrations found in the chapter on Fractures and Dislocations are adequate, accurate, being based upon radiograms, and essential to show the methods of displacement by muscle pull and by deformity.

This book should be of value not only to the student, interne or general practitioner, but also to those teaching the art and science of surgical diagnosis.

PAUL G. LACROIX, M. D.

Getting Ready to be a Mother: By Caroline Corrant Van Blarcom, R. N. 2d. Ed. Rev. New York. The Macmillan Co., 1929. pp. 286.

This little work is one of the best of the many manuals for expectant mothers that are available. It is interesting, readable, and practical. It covers the essential points with which every woman expecting a baby should be familiar, and contains very little that be omitted, in contrast to many other books of this type. The various topics that the physician should discuss with prospective mothers are taken and are presented more fully than the doctor as a rule is able to do in office consultations. It can be heartily recommended as a valuable book to place in the hands of our obstetrical patients.

E. L. KING, M. D.

Manual of Helminthology, Medical and Veterinary: By H. A. Baylis, M. A., D.Sc. New York. Wm. Wood and Co., 1929. pp. 303.

Although this handsomely bound volume is intended to be a companion to Thompson and Robertson's *Protozoology*, the *Helminthology* is actually confined to the systematic presentation of the helminths of man and domestic animals without reference to their clinical importance. The material relating to the species of helminths in man can be found to better advantage in recently published works dealing strictly with human forms and presenting information of value to the clinician as well as to the student of zoology. The work of an eminent helminthologist, it is unfortunate that this volume is so limited in its outlook, although it will probably appeal to the advanced student of zoology who desires to gain an accurate idea of the taxonomic relations of helminths of man and domestic animals.

ERNEST CARROLL FAUST, Ph.D.

A Manual of External Parasites: By Henry Ellsworth Ewing. Springfield, Ill., Chas. C. Thomas. 1929. pp. 225.

This little volume is a timely presentation of the more important arthropods, exclusive of flies and their allies, which parasitize man and the higher vertebrates. Briefly summarize it takes up *ad seriatim* mites, ticks, biting lice, sucking lice, and fleas, while the final chapter is devoted to a "Description of New Genera of Ectoparasites." The several groups are considered from the aspects of structure, life history, classification, and prophylaxis. For each group there is a brief but comprehensive reference citation. Ninety-six well chosen figures illustrate the volume. Without attempting to cover the field of medical entomology the author has furnished a useful and authoritative study which should appeal to a large group of investigators.

ERNEST CARROLL FAUST, Ph.D.

Methods and Uses of Hypnosis and Self-Hypnosis: By Bernard Hollander, M. D., M. R. C. S., L. R. C. P. New York, The Macmillan Co. 1928. pp. 191.

This book affords many very useful suggestions for the psycho-therapist, not only from the standpoint of hypnotic analysis, but offers many practical suggestions for every day use.

It is easy to see that Hollander is an enthusiast on his subject, but there is a leaven of hard common sense and practicality pervading the whole book, which renders it very interesting to read. It is possible that the manner in which the author handles the subject of hypnosis would lead the uninitiated into the error of thinking the technic more easily mastered than it actually is, but, nevertheless, the book should prove a very useful, as well as practical, addition to the specialist's library.

E. McC. CONNELLY, M. D.

Diseases of the Gall-Bladder and Bile Ducts: By Evarts Ambrose Graham, A. B., M. D., Warren Henry Cole, B. S., M. D., Glover H. Copher, A. B., M. D., and Sherwood Moore, M. D. Philadelphia, Lea & Febiger. 1928. pp. 477.

This new book on the biliary tract, written by the author of the ingenious method of cholecystography, represents a timely compilation and discussion of the various modern clinical and laboratory procedures used in examination of the gall tract. In a way to be expected, much space

is allotted to the details of gall-bladder visualization. There is a broad and fair interpretation of the clinical values to be derived from the utilization of this method. The experiences of numerous other observers of gall-bladder physiology and pathology are given much space and due credit. The illustrations of gall-bladder shadows, especially some of the rarer, abnormal types found in large series of studies, are instructive and should be helpful for comparative reference.

There is an outline of the methods used in determination of liver function. Several dye methods, bromsulphalein, phenotetrachlorophthalein and phenoltetraiodophthalein, and those of lesser importance are very plainly described. In addition the bile pigment and carbohydrate tests are mentioned.

Surgery of the gall-bladder and bile ducts, including the accepted methods of handling same, occupy several chapters. Little consideration is given to the medical measures for relief of many conditions known to be aided thereby, or even to some means of helping that large army of post-surgical individuals (cholecystectomized or otherwise) that resorts to the internist for some or more relief.

DANIEL N. SILVERMAN, M. D.

The Duodenum, Medical, Radiologic and Surgical Studies: By Pierre Duval, Jean Charles Roux and Henri Beclere. Tr. by E. P. Quain, M. D. St. Louis, C. V. Mosby Co. 1928. pp. 212.

This short volume of 200 pages on the duodenum, written by a French surgeon, internist and radiologist, affords the student of the digestive tract an opportunity to glean many important facts about a much neglected organ from the standpoint of the different investigations.

The six chapters comprise instructive discussions of the symptoms, and illustrations of the changes undergone by the duodenum as a result of extensive disease (especially gallstones), and of intrinsic pathology such as periduodenitis, compression of the third portion by the mesenteric pedicle, duodeno-jejunostomy and ulcer of the bulb.

The sixth chapter is of particular moment since it clearly demonstrates the reason for considering duodenal intoxication as the important phase of intestinal toxemia rather than that of colonic putrefaction. In fact, the degree of intestinal toxemia seems to be in indirect proportion to the putrefactive processes.

The text is recommended more to the specialist on digestive diseases, since it deals with only a small part of the digestive tract.

DANIEL N. SILVERMAN, M. D.

Text-Book of Surgery: W. Wayne Babcock, A. M., M. D., F. A. C. S. Philadelphia, W. B. Saunders Company. 1928. pp. 1367.

The book is an excellent text-book for students and a dependable reference work for the busy surgeon. The author says, in his preface, "I have written in a dogmatic vein what practice and study have made me believe is true today."

In reviewing the work one realizes that the practice of the author presents in the main that which is conceded to be the best standardized practices.

It is surprising how well the author has succeeded in bringing into this volume a great many of the more recently developed tests which make for accuracy in surgical diagnosis. This is particularly true in chapter 35, "Spine and Cord."

It would be beyond the scope of this review to mention in a critical way each chapter, or even to mention the best points in each chapter.

There are certain chapters, however, which merit special attention. The chapter on pre- and post-operative treatment is excellent and may be followed.

The details on surgical anatomy, in the chapter on ligations, are concisely given.

In the chapter on plastic surgery the illustrations are so excellent that one hardly need read the text.

It is such a work as one might recommend without hesitation to students.

ISIDORE COHN, M. D.

Clinical Electrocardiograms: By Frederick A. Williams, B. S., M. D., M. S. Philadelphia, W. B. Saunders Company. 1929. pp. 219.

The purpose of this monograph, as indicated in the preface, is to serve as a reference work in the interpretation of clinical electrocardiograms for those whose experience in the field is limited. The text is brief, no attempt being made to discuss the galvanometer or the theoretical aspects of electrocardiography or the cardiac mechanism. The significance of the deflections is summarily presented, together with short discussions of the various irregularities and of the wave changes which experience has shown to be associated with myocardial disease.

The text is illustrated by 368 figures, each accompanied by an explanatory legend which includes a statement of the pertinent clinical diagnosis. For the latter reason the figures cannot fail to be of value to the student. The author also includes interesting mortality tables, based

upon his own observations and those of his co-workers.

It is too much to expect that any volume shall be free from error. But in this work the author repeatedly betrays a lack of appreciation of even the fundamentals of electrocardiographic interpretation, particularly as these apply to the mechanisms involved.

In the legend accompanying figure 74 and in the text on page 56, and again on 127, the author speaks of auricular flutter associated with sino-auricular block. While it is true that a heart at times subject to paroxysms of flutter may show sino-auricular block at other times, yet anyone who understands the mechanism of flutter will recognize the inadmissibility of assuming that sino-auricular block may interrupt flutter. Another example, of more importance from the clinical side, is to be found in figures 138 and 139. The first of these figures is interpreted as complete auriculo-ventricular block; the second as 2 : 1 partial heart block. In reality the same mechanism is present in both cases—namely, slow A-V conduction, the P-R intervals being approximately 0.27 sec. The P waves are exceptionally high in these electrocardiograms. Figures 60 and 61 indicate that the author either does not know or does not apply the criteria upon which an interpretation of retrograde conduction must be based. Perhaps the most significant error, however, is designating as interpolated, the premature beats of figure 41. This is repeated in the text on page 42. Finally, neither figure 187 nor 188, chosen to portray sino-auricular block, is illustrative of that condition. They are examples of sinus arrhythmia. Here again the author is either ignorant of or fails to apply the necessary criteria. The interpretations of a number of other figures are also either incorrect or highly debatable. Nor is the text free from similar blunders.

The reviewer wishes to make it clear that some of these errors are unimportant from the purely clinical standpoint. They must be emphasized, however, since they determine the general caliber of the first half of the monograph.

Perhaps the second half of the monograph is better. Yet certain of the author's interpretations, *e. g.*, the distinction between complete and incomplete bundle branch block, appear to be at variance with authoritative opinion.

The book is not, therefore a trustworthy guide either for those who desire to further their knowledge of electrocardiography from textual explanations or for those who wish to improve their ability to interpret tracing by comparing their own interpretation with those of the author.

RICHARD ASHMAN, Ph. D.

The Heart: By Thomas Walmsley. (Vol. IV, Part III of Quain's Anatomy, eleventh edition.) London, Longmans, Green & Co. 1929. pp. vii + 152. 84 illus.

The high standard set by preceding issues of Quain's Anatomy and other volumes of the current eleventh edition is maintained in the present revision of the section on the heart, published in a separate volume.

The content of the book is indicated by the following major headings: Comparative anatomy; Embryology; External form; Interior; Form of the systolic heart; Minute structure and histology; Blood vessels; Lymph vessels; Nerves; Position; Dimensions; Abnormalities; Pericardium. The work departs from the conventional, purely descriptive type of anatomical text. Not only is the heart treated from the descriptive standpoint, but its structures are presented in correlation with the functioning of the organ. The "connecting system" claims a large share of the thirty pages devoted to minutes structure and histology. Embryology and comparative anatomy are drawn upon extensively for their explanatory bearing upon the anatomy of the human heart. Much recent work is incorporated, and a bibliography of nearly three hundred titles adds to the usefulness of the volume for those who desire an anatomical reference on the subject.

HAROLD CUMMINS, Ph. D.

Recent Advances in Psychiatry: By Henry Devine, O. B. E., M. D., B. S. (Lond.), M. D. (Bristol), F. R. C. P. (Lond.). Philadelphia, P. Blakiston's Sons & Co. 1929. pp. 340.

To the reviewer's desk comes this volume of recent advanced series dealing with psychiatry, segmental in formation and can readily be used as a companion to the advanced series in Neurology of Brain and Strauss by the same publishers.

It is the work of an academician as well as a psychiatrist inasmuch as there is much biogenic as well as psychogenic analysis of the elements and fundamentals necessary in writing a book of this type.

It is of interest to note the paragraphs given to the explanations of acute infections and toxemias and causative factors in the psychoses. Likewise the chapter on Biogenic Psychosis. In this chapter the *spiritus familiaris* is elaborated upon much more than in other volumes pertaining to the same subject. Intertyped here and there one reads excerpts and explanations flavored with psycho-analytic interpretations which adds interest to the descriptive delineations of the various types within its covers.

It is well written, easily readable, containing much instructive material with especial reference to the treatment of the various psychoses.

Following each chapter is appended references which readers may use as an aid for more detailed explanations. The book should be read by every Neuro-Psychiatrist and is a valuable addition to any medical library.

WALTER J. OTIS, M. D.

Chronic (Non-Tuberculous) Arthritis: By A. G. Timbrell Fisher, M. C., F. R. C. S. (Eng.). New York, The Macmillan Co. 1929. pp. 232.

This text-book is the result of a careful review of most of the important literature covering the subject of arthritis, together with the personal experience of the author. It represents, therefore, a digest of the subject of chronic arthritis, giving modern interpretation of the pathology, symptomatology and treatment of the disease. The text is well written and the expressions of opinions carefully selected. The illustrations are accurate and enlightening.

It would be impossible to abstract such an important volume. Only study of the text itself could possibly do justice to the work of the author. It is recommended as being an unusually valuable text for medical students, as well as those already practicing medicine. It is interesting to read, but still is not a long drawn out dissertation which would detract from the interest of the subject.

JOHN T. O'FERRALL, M. D.

Surgical Pathology: By William Boyd, M. D., M. R. C. P. Ed. Dipl. Psych., F. R. S. Can. 2nd ed. Philadelphia, W. B. Saunders Co., 1929. pp. 933.

As a text for his book the author gives the following quotation from Osler, "As is our pathology, so is our practice." The first chapter begins with the following paragraph, "The surgery of today is based on pathology. Unless he builds on that solid formation, the surgeon is no better than a hewer of flesh, and a drawer of blood." With these thoughts paramount, the author proceeds with this excellent treatise on surgical pathology. Always maintaining the viewpoint of the pathologist, he displays an intimate knowledge of surgery, which enables him to treat his subject in a most practical and convincing manner. Boyd presents pathology as a science, of which an accurate knowledge is as essential to the surgeon as his skill in handling his instruments.

Boyd's Surgical Pathology describes the usual pathological conditions, in simple concise language, which makes very interesting easy reading.

The author describes his cases and gives his experiences in an almost conversational manner. The experiences and opinions of many other prominent men are cited. A list of references is found at the end of each chapter. The illustrations are numerous and exceptionally good. A better surgical pathology for general use by the surgeon, pathologist, or medical student would be hard to find.

ADELAIDE MARY ZOELLER, M. D.

The Vertebrae: By Arial Wellington George, M. D., S. C. D., F. A. C. R. and Ralph Davis Leonard, A. B., M. D., New York, Paul B. Hoeber, Inc. 1929. pp. 256.

This volume of the *Annals of Roentgenology* should prove of great value to all roentgenologists and particularly to those interested in the Workmen Compensation Act, affording a better understanding of some of the more common conditions of the vertebral column found in industrial accident cases.

This book comprises a complete roentgen study of the whole vertebral column, including anomalies, fractures, dislocations and bony pathology. It contains 249 pages, including 212 well selected illustrations adding to the value of the book.

A whole chapter is allotted to Medico-Legal Expert Testimony with many valuable suggestions to those who are called to court as expert witness in injuries of the vertebral column.

LEON J. MENVILLE, M. D.

Disease of the Thyroid Gland: By Arthur E. Hertzler, M. D., St. Louis. C. V. Mosby Company, 1929. pp. 286.

The second edition of this splendid monograph on diseases of the thyroid gland deserves more than passing mention. It is the work of a student of medicine who has been particularly interested in the pathology and the operative treatment of goiter. Hertzler maintains that all types of disturbances of the thyroid gland are one and the same, and do not represent separate diseases but stages for the most part of one progressive disease. That is to say, a young woman with a simple colloid goiter might possibly develop a non-toxic adenoma which later becomes toxic and finally develops into a typical exophthalmic goitre disease. The literary style of the author is much to be commended. The book reads easily and is not too technical. In fact, one is rather struck with the conversational type of presenting the subject, and to a certain degree at least it adds a great deal of pleasure to the reading of a subject which might be expressed in such technical and difficult terms that

it would be read with difficulty. A chapter on the hospital management of goiter patients by Chesky adds to the value of the work for the surgeon.

J. H. MUSSER, M. D.

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Wilhelm Maudrich, Vienna: The Treatment of Fractures, by Lorenz Bohler, M. D.

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THE FORGOTTEN DOCTOR*

W. A. DEARMAN, M. D.

Gulfport, Miss.

I am deeply appreciative of the honor that has been conferred upon me by our President in appointing me Chairman of the Section on Medicine. I feel very keenly the responsibility in arranging a program for the Mississippi doctors and those who may come in from neighboring states. I selected as my subject very common words, indeed, nothing ultra-scientific at least, "The Forgotten Doctor."

I think it was James Samuel Knox who said, "What a man doesn't know he usually opposes." In other words, what he is not up on he is down on. That is a fairly good statement.

After having heard these most interesting contributions in the Section on Eye, Ear, Nose and Throat, and Dr. Gaudet who remarked that he needs the general practitioner on his right-hand and the surgeon on his left, brings us to the point that we need the amalgamation of our minds and of our clinical research in the practice of medicine and all its ramifications. I understand that there are about 1,700 active practitioners of medicine in the state of Mississippi. Of that number, only 1,042 are allied with a medical organization or medical society. Therefore, we have prac-

tically a thousand physicians in the state of Mississippi whom you may say have been forgotten.

I appreciate very fully, and it has been my desire to impress upon my confreres, the importance of unity of service. I have found through a good many years of experience that medicine is too broad and the field is too wide for one man to cover it all.

I have impressed, intrigued and encouraged our local men, in Gulfport and on the Mississippi Coast, that for the sake of good will we should come together and organize a specialty, take up what we like best and prosecute it with all the vigor of our souls.

I soon found myself lost. I need surgical diagnosis. I need the urologist on the one hand, I need the psychiatrist every day under a distressing situational influence in the aberration of the mind, people who are in distress. I need the neurologist to bring out the refinements of focal infection in brain conditions. I need the ophthalmologist because I am not familiar with an ophthalmoscope. I should be, but am not. Very few of us are. But I need him behind me to give me a report of conditions in the fundi, in order that it might point out to me some of the subjective and objective signs that I have witnessed almost every day; a satisfactory explanation to me in clearing up profound vertiginous trends, dizziness, vertigo, if you want to call it that, abnormal conditions of the brain, loss of memory, amnesia, paralysis, paresis of any kind of the cranial nerve. Just a little help when I am treading along a scientific

*Chairman's Address, Section on Medicine, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 14, 1929.

way helps me over the rough places and finally I see my horizon as it brightens, and I finally come to a clear, concise and satisfactory diagnosis.

I know not why symptoms differ so in different individuals with the same condition. Glaucomatous conditions have been discussed here in your hearing before you. Every patient does not present symptoms alike. It is as well to know your patient as it is to know the disease or the morbid condition under which he is laboring.

There is room enough in this world and work enough in this world for us all. Dr. Gaudet mentioned a minute ago that, if he does it with all the vigor of his soul and with all the honesty that is within him and with all humane spirit and love for his profession and his fellow patient, he has to work day and night, and his labors have never ended, in order to cover his field—the eye, ear, nose and throat.

We thought skin conditions were very complicated. They are in a way. I need the dermatologist. There is hardly a day passes that I do not send someone to the dermatologist to have cleared up some obstinate and obscure dermatological lesion. It may be local, it may be constitutional. Symptoms vary, symptoms differ. It is surprising that in a brain tumor—neoplasia—we quite frequently see the skull thinned to paper-like thinness, still no headache, no pain, no subjective symptom, except rapid loss of vision, loss of memory. An intelligent girl, making grades in her school, standing at the head of her class, fails to get up a simple solution of her problem. Why?

The next individual comes with pain, the universal cry, as a rule, of all morbid processes of the human body, when something has gone wrong in that physiological machine. How complex it is physiologically and biologically; how much more so when pathological conditions have established themselves and are beginning to show subjective and objective signs.

Now, with regard to the doctor who never attends a medical society. I am not criticizing unfavorably. There are many reasons. They should not be elucidated probably, neither should they be commented upon. I practiced medicine twelve years before I darkened the door of a medical society. Why didn't I go? I don't know. I wasn't interested. I didn't know anything about a medical society, but I want to say to you that coming in contact with, and the amalgamation of minds of master men in our state and other states is a post-graduate course.

I have seen doctors like myself who come from lowly places, and are still in a low place, but coming in contact with the wide awake, scientific, alert medical society, the scientific programs presented and the cases well worked out is an education. They lift their feet from the low grounds of indifference, and it places them upon a highway of scientific achievement and scientific endeavor.

The first time I ever attended a medical society in state meeting was at Vicksburg. I had written a paper. I did not know whether I could go up there and present the paper, or whether anybody who had a paper could read it. I found they had a program outlined and it was hard to get in. Quite frequently we misunderstand the situation, and that is all I knew of a medical society. Since that time I am an advocate of medical organization. Petty differences among physicians, all have the same problems, all have the same conditions under which to work; still we find distinction.

Why cannot we come together in unity, one mind, one great purpose for suffering humanity? We have well organized hospitals. I have watched the growth and progress of medicine in Mississippi. I was born and reared in the state and have scarcely been beyond its confines. I have watched the progress of medicine as it grew broader and wider and more scientific and the enlistment of master minds who give

their clinical experiences to those around about.

The only way in the world to enliven the medical society, to keep it alive, wide-awake and let it endure as long as the everlasting ages roll, is to have a well conducted clinic in your medical society. You have found that the man who takes a patient to a clinic for diagnosis gets into trouble. Why does he get into trouble? Because he has not worked it up. Do not ever go up north, please, and say anything about a case unless you have a blood chemistry record with you. It will cause you embarrassment as sure as the world. That is the first thing they ask for—an N. P. N.—what about it? You say that you did not do that. If you get into trouble that closes the issue. It is a little embarrassing occasionally, of course.

I want to compliment the doctors in Mississippi because the Louisiana doctors who attended our Meridian meeting last year came with the statement that it was a most scientific program, the best presented, and the most freely discussed that they had ever heard in all the history of their medical organization. That was a compliment, gentlemen, to Mississippi. Several years ago, back in the so-called "dark ages," it would have been almost impossible for us to have done that; but now we have the respect of our neighboring states and we have the profound respect and recognition of our northern states, because they look upon us as southern men, loyal to our trust and true to our patients.

I am deeply grateful of this opportunity to make these few remarks. Let us enlist ourselves as missionaries. One man cannot do it, but as you go about and meet the practitioners who never come to a medical society meeting, put your arm around them and lead them gently in, because if they do not come in, they are walking through the valley of the shadow of death, only to be guided by the flickering candle of indifference to medical organization and to the outcry of those depending upon men.

We are, indeed, servants of humanity. Ours is a noble calling. Let no one be forgotten, but let us enlist them all under one great unit, a medical unit, a medical organization, that shall stand as firmly as a rock-ribbed sea, as unyielding as the Rock of Gibraltar. What are we to do? It may be summed up:

Ego sum ad tollendos
Algros, et ad servandos sanos.

I am to serve the sick,
I am to preserve the well,
And to heal the sick.

LYE STRICTURE OF THE ESOPHAGUS.*

D. C. MONTGOMERY, M. D.,
GREENVILLE, MISS.

This is an old subject, brought before this Medical Association, no doubt, many times in the past, and I hope it will continue to be brought to your attention to remind you of the necessity for the passing of such state laws as may be necessary for the protection of the present and future children of this State.

The accidental swallowing of caustic alkali in solutions of lye or proprietary washing and cleansing powders is a rather frequent occurrence. These powders contain from eight to fifty per cent of caustic alkali and are sold by grocers everywhere. The labels on their containers give no warning of the dangerous nature of their contents, nor antidotal advice. Frequently vessels used to dissolve the powders are afterward used for drinking without rinsing, and thus the residue of the powder is swallowed in strong solution. At other times solutions of lye are drunk by mistake. These entirely preventable accidents would be rare if the containers were labeled "Poison" as is required by law for this or any other poisons when sold by the

*Read before the Section on Eye, Ear, Nose and Throat, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 14, 1929.

dealers. The necessity for this label is most important on lye preparations because they usually are kept in the kitchen.

Lye is the most common cause of esophageal stricture. Of the one hundred and eighty-six cases analyzed by Vinson at the Mayo Clinic, one hundred and two cases were due to the ingestion of lye.

We have had under our treatment in the last two years five cases of stricture of the esophagus due to lye. One is completely well, one is almost well, one is still receiving frequent treatments, and two died following the preliminary treatments.

Strictures are often multiple and their lumens are rarely either central or concentric. In order of frequency their location is in the largest number of cases in the upper third, where the left bronchus crosses; second, in the region of the cricopharyngeus, and third at the hiatal level.

The great majority of the patients are children, though a few occur in adults, usually through suicidal intent.

PROGNOSIS.

The mortality of untreated strictures of the esophagus is very high. Clearly defined strictures left to themselves are invariably fatal. Those from caustic burns are much more severe. Before the days of esophagoscopy the rate was about 50 per cent. The sooner the case comes under observation and treatment the better the prognosis.

SYMPTOMS.

The symptoms that come on immediately after the ingestion of lye are due to inability to swallow because of the severe inflammatory reaction, swelling and ulceration. If the patient survives this period, then acute symptoms subside and the swallowing improves, frequently becoming almost normal. Then gradually dysphagia develops until there is difficulty in swallowing solids, later liquids, and finally even inability to swallow saliva. Loss of weight

is progressive. Dehydration results in severe cases of water starvation.

Diagnosis is based upon the history, and the above findings, and examination with the esophagoscope and x-rays.

TREATMENT.

The esophagus is one of the most intolerant organs with which one has to deal surgically. Besides being a septic canal which drains all the infectious secretions from the mouth to the stomach, it is susceptible to shock out of all proportion to the severity of the operation or lesion. There are two methods of treatment, both emphasizing the importance of putting the esophagus at rest during the acute inflammatory stage, and when there is marked narrowing of the canal, and inability to swallow sufficient nourishment.

In treating lye stricture of the esophagus it is desirable to increase the lumen of the cicatrized area as quickly as possible with the least risk and discomfort to the patient, and to produce a permanent functional result.

We should not allow a stricture of the esophagus to become complete if the patient comes under observation early enough.

Following the ingestion of lye there is usually a severe local and general reaction, and the patient is unable to swallow even liquids. During the period of complete closure which usually lasts three or four days, fluids should be given by rectum and subcutaneously if necessary. If the patient survives this period with its attending complications, this severe reaction subsides and fluids can be swallowed. At this time a twisted silk thread should be passed through the nose and swallowed about a foot every hour, and after two or three yards have been swallowed a larger size thread should be tied on, and two or three yards more swallowed. To this an ordinary bass line should be attached and brought through the nose to prevent the patient from chewing it. Peristalsis gradually

pulls the thread into and through the intestinal tract and a segment must be cut off after each bowel movement. This thread will prevent complete closure of the stricture and is to be used as a guide later.

Secondary contraction of scar tissue usually reduces the lumen in six weeks to where liquids cannot be swallowed, and at this time it is necessary to begin dilatations. With the thread as a guide, a sound is passed through the stricture and withdrawn. Succeeding sounds increasing in size are passed at weekly intervals. At the end of three or four months the stricture is usually dilated to forty-five F, and further treatment is carried out with the same sounds at increasing intervals. Sounds should be passed at one or two month intervals for a period or two or three years, before you can be assured the stricture is cured.

The above treatment applies to those cases seen at or within a few days of the ingestion of the lye.

However, unfortunately the majority of cases come under observation when the esophageal closure is almost or totally complete and dehydration marked.

In this class of cases I do not believe there is any better treatment to follow than that sponsored by the Chevalier Jackson Clinic. The necessity of putting the esophagus at rest in these cases is most important and is done by an early gastrostomy. This is also advocated by Mosher of Boston.

In feeding through the gastrostomy tube in complete strictures it is essential that the saliva be introduced into the stomach after the food is chewed up, or spat into a funnel connected with the tube, as this is absolutely necessary to the proper nutrition of the child.

With the general improvement of the child, due to proper and ample feeding and to the freeing of the esophagus from inflammation and irritation secondary to

stasis of food, the lumen usually opens sufficiently to allow the swallowing of a string. If this does not occur, and the string is not swallowed, then the esophagoscope is passed through the esophagus to the point of the stricture, where Jackson's flexible bougie is passed through the stricture in increasing sizes by direct sight, until a string can be swallowed without difficulty. After the string has passed into the stomach the end is recovered through the gastrostomy opening, and brought outside where it is constantly kept in place as long as is necessary. Now retrograde bandinage or dilation with Tucker's dilator graduated from ten to thirty French scale is used. The dilator is tied to the end of the string in the gastrostomy opening and a second string tied to the distal end of the bougie. The oral end of the string is then pulled upon, drawing the rubber bougie up through the stricture and out of the mouth, the string on the distal end following through. The bougie is then cut from the end of the string and the oral and gastrostomy ends of the strings are tied, and the new endless string remains in place ready for another dilation. This treatment is carried out once or twice a week as may be required. The intervals lengthen until treatments are given at rare intervals over a period of three years.

As the stricture dilates the continuous string can be dispensed with, and need be swallowed only shortly before the time of passage of the bougie.

CASE 1. (PATIENT PRESENTED)

A baby two years old when he swallowed the lye, came to me in a state of complete closure of the esophagus, and very marked dehydration and emaciation. He was nothing but skin and bones having had no nourishment for three weeks. An immediate subcutaneous injection of glucose solution was given and a continuous rectal drip of the same solution. At the end of forty-eight hours a gastrostomy was performed and feeding commenced. At the end of two weeks being still unable to swallow liquids, but having improved physically, with the aid of an esophagoscope we were able to pass Jackson's filiform bougie. This was continued with increasing sizes until patient was able to swallow water. At this time

we passed a string through the nose and with a great deal of care we were successful in having the string pass into the stomach where it was recovered through the gastrostomy wound. Tucker's dilators were then used twice a week, at first care being taken not to "step" up the size of the bougies too rapidly. Intervals of treatment were increased to once a month and so on until the past year when one treatment every two or three months was given. The endless string was dispensed with at the end of about six months, and the little patient swallows the string the morning of the treatment. This patient is well now and the gastrostomy wound will be closed soon. It has not been used for a long time except for treatments, and has caused very little inconvenience during this long period.

This child's health has been perfect, he is above normal weight and eats everything within reason. He has learned to be careful and masticates his food thoroughly and in small amounts. The last bougie was a thirty-two F. and the stricture need not be dilated any larger. It is a mistake to try and return the lumen to its normal size. Jackson has shown that the scar tissue in many cases does not make up the entire circumference of the strictured lumen, and on dilation the normal wall will stretch indefinitely, and will rupture easily on sudden overstretching.

There are other methods of treatment which I will not go into except to mention two only to condemn both. That is blind bandinage which inspired Trousseau to say that "Sooner or later all cases of stricture of the esophagus die of the bougie;" secondly, forcible divulsion which was a little more rapid in killing the patient in the majority of cases.

CONCLUSION

Let me emphasize that the best method of treatment is the prevention of accidents, and there is no better way to aid this than by rendering every possible support to the Committee on Lye Legislation, in their efforts to protect the people and especially the children.

Dr. E. F. Howard (Vicksburg): Anyone who can present a case such as this before the Association demonstrates very conclusively that he can deliver the goods, and I have nothing to say from that end of it at all. I am not qualified to do so. I simply want to congratulate Dr. Montgomery on the very excellent piece of work he has done. Anyone who looks at that child and gets a description of the condition of the

child when first brought to him can see that he has saved a life and that is a thing which a good many doctors are not able to say for themselves even after a great many years.

Dr. Montgomery has consented that I may get away for a moment from the scientific end of it to discuss the question of what we can do to prevent conditions of this sort in children and in adults, too, for that matter, because every now and then some adult gets hold of something of that sort.

About a half dozen years ago they attempted to get some sort of legislations through the country that would help in the way of prevention. Jackson, of Philadelphia, heads the committee of the American Medical Association that has charge of this work, and in each state we are endeavoring to get legislation through. We have provided a uniform bill which has passed, I think, the majority of the legislatures in this country, and a twin to that has been passed by Congress. Of course, Congress handles only the question of interstate commerce and cannot get into the matter in individual states themselves; therefore, it will be necessary for each state to pass such a law.

The uniform bill that we have put before the legislature twice and twice failed to pass simply provides for a proper labeling in big, bold face type on every package that is offered for sale in the state. There is not the slightest objection raised to it by the manufactures of the lye. They are perfectly willing that it be passed. In fact, they were called into conference in the matter before the bill was framed. It is simply inertia in the House, too much politics and too much to do; not politics fighting against the bill, but general politics kept the House so busy with its other work that we were never able to get a vote on this thing. As there is no fight on it, it is easy provided we can ever bring it on the floor of the House. It has been brought before two legislatures and has failed both times.

We want to get you chaps, if you will, when you go home, to try to work up some sentiment in the matter so that when the thing comes up it can be slid through, as it can be done, in a day or two. If you forget about it and get lazy in the matter, just scratch your heads a minute and think what are the possibilities of some child of your own getting in the same fix this little fellow is in, and perhaps you won't be able to get hold of a man like Montgomery, and see if that won't make you help out a little more when we come before the legislature next time.

Dr. T. D. Bordeaux (Meridian): I should like to say a few words in regard to the esophageal

tricture. Two of the most serious problems that the otolaryngologist has to face are foreign bodies in the bronchus and lye stricture or stricture of the esophagus. That is very serious and very important to us because it deals with the little ones who are the most precious possessions we have in this world. The prognosis is so serious because it is a long, long, long drawn out condition with which the otolaryngologist has to work, and after he has worked many, many years in some cases, even then he may lose his patient.

We have to be extremely careful in the handling of these cases, as Dr. Montgomery said. Oftentimes they come to us when they are practically dehydrated, when they are in no condition whatsoever for any kind of surgery. In these cases we have to take these little ones and with a very great amount of care in the nourishment and in their food, build them up. In these cases we first have to have means and methods in co-operation with the general surgeon to feed these little ones by making an opening into the stomach. After we get these little ones built up to a point where we can do some surgery, then the otolaryngologist is in a position to do something in a very small way as a beginning.

Dr. Montgomery called attention to the fact that of all the organs in the body that are most susceptible to shock, the esophagus is one. That is true.

I have had some fortunate and some very unfortunate experiences in the esophageal strictures. As I said in the beginning, one of the things I hate to see or hate to hear of is a poor little child who has swallowed lye. In some cases if the solution is weak or if the child got a very small amount, you may have a moderate stricture, but if the solution is sufficiently concentrated and the child got enough of it, you will have a stricture that will be with the patient as long as he lives, because we never, never cure a lye stricture. We can dilate and dilate and keep it dilated, but to my mind, that cicatricial tissue is there as long as the patient lives.

Dr. Willis Walley (Jackson): I should like to mention two points only on this subject. The first is the very great importance in these cases of the general practitioner getting them to a hospital and a good laryngologist to take care of them before they become past the time that it is possible to do anything for them.

I have seen a number of these cases brought in weeks and weeks after this condition came about, or after the swallowing of the lye. It decreases

the chance of recovery of the child in a very rapidly growing proportion after the closure of the esophagus has become complete.

The earliest time that they can be gotten to the hospital, to the laryngologist, and to the surgeon where the proper opening can be made in the stomach, is very important, and that important point rests with the general practitioner as a rule. The idea of forgetting a case and saying that it is incurable and is going to die ought never to be temporized with the least. The case should be put in the hands of a very competent laryngologist.

There is one other point and that is an early gastrostomy, from the general surgeon's standpoint. I think it is criminal to leave these children over a long period of time, or especially an adult, when a gastrostomy can be performed under local, and the feeding started early in the stomach, thus giving the laryngologist an opportunity to save the life. That is especially true with reference to adults.

I want to stress these two points—early treatment in the hands of the practitioner and putting the case in the proper hands and an early gastrostomy which can be easily done under a local anesthetic in the adult.

Dr. D. C. Montgomery, Greenville (closing): I should like to thank you for your discussion, particularly Dr. Howard, because I know he has been interested in this subject for a long, long time. I have heard him discuss it on quite a few occasions. At one time, I think it was more or less the apple of his eye.

I brought this case before you to emphasize particularly again what Dr. Howard has brought out, the necessity of sponsoring some law, particularly that of labeling these poisonous products, which would minimize the dangers to a great extent. Dr. Jackson has proved that these strictures, these scars, are rarely ever complete around the circumference of the esophagus, usually leaving one side of the esophageal wall normal. That is the reason that divulsion or hurried dilation is apt to rupture the esophageal wall and does do it in practically all those cases which you do not have under direct observation, that you do not see and dilate directly under the esophagoscope. I hope this body will do something towards preventing the ingestion of lye, and helping in the legislation that is proposed by the American Medical Association.

THE EARLY DIAGNOSIS AND TREATMENT OF CARCINOMA OF THE UTERUS.*

HENRY SCHMITZ, M. D.,

CHICAGO, ILL.

General characteristics and properties are possessed by all cancers. It is timely to recall them as thereby one avoids many pitfalls in diagnosis and treatment. These general properties are:

1. Malignant tumors have their primary location most frequently in the alimentary tract in male persons and most frequently in the reproductive system in female persons. The percentages in the digestive tract, reproductive organs and excretory system by race and sex are according to Pearl¹:

	Male		Female	
	White	Negro	White	Negro
Digestive tract	50.24	64.04	33.33	22.78
Reproductive organs	8.94	8.99	44.87	63.29
Excretory system	10.63	5.62	2.14	3.80
Total	69.81	78.65	80.34	89.87

If malignancy of these systems, especially the alimentary tract in the male and the generative organs in the female, could be healed, then cancer would retire at once to a relatively unimportant place among the causes of death.

Pearl also determined the frequency of cancers in the female primary and secondary sex organs and found in his autopsy material that the percentages of malignant tumors in the ovary, uterus and breast in the white females were 20, 50, 30, and in the negro females 12, 56, 32. The uterus is, therefore, the sex organ in the female, most frequently invaded by carcinoma.

2. There is no known specific cause for cancer but a suggestive etiology, namely, chronic irritation and chronic inflammation. Ewing² states the possibility of discovering the formal genesis of cancer, that is,

some general property of the cancer process, which may put us in control of these diseases may justify the widespread interest in this ambitious project. But science is laying a very broad foundation in cancer research upon much of which no superstructure may ever be erected. On the other side, the more tedious study of the causal genesis—comprising the exciting and predisposing factors, and the clinical conditions under which cancer arises, and extending over a wide field—makes continuous progress and has brought results of great theoretical and practical value. This knowledge of etiology, together with the natural history of the disease, public education, and more varied and skilful treatment, have steadily advanced the means of cancer control.

3. Cancer is a disease of the cells, the unit of life, which has lost effective inhibition or restraint of growth gradients.³ It seems probably that natural resistance to a tumor is the ability of the host to react so promptly that a growth cannot gain foothold. Resistance must be effective before a tumor is established. Nothing may be hoped for at present in respect to a successful therapy to activate the defensive powers of the host after a tumor has become established.⁴ This would refer particularly to the uselessness of treatment with colloidal solutions of heavy metals and serums and antitoxins prepared from bacteria, supposedly causing cancer.

On the other hand, if restraint of division can be obtained by agents which (1) restrain cell division without complete destruction of cell function, or (2) permits the cell to mature from its embryonic condition to that of differentiation with growth restraint, then the hope of benefit in this disease shines brightly. These factors can only be attained (1) negatively by surgical eradication, and (2) positively by radiations. Cinti in his film has shown that the action of rays on cancer cells is twofold: 1. Growth restraint, and 2, cell destruction.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

4. Cancer can be cured by attacking it in its beginning stage. Early carcinomas do not cause symptoms. Pain is ordinarily the first symptom ushering in a disease and has rightly been called "the watchman of our health." Unfortunately pain is a late and the most unfavorable symptom of cancer. The clinical and diagnostic enumeration of the symptoms and signs of cancer in our textbooks is that seen in advanced cancers and should be changed to conform with our newer methods of teaching.

Early carcinoma is always associated with some chronic inflammatory process. The persistence of such inflamed areas after proper and accepted treatment may be a bad omen and should lead to an excision and not incision of the suspected area and a microscopic examination of all the tissues to rule out or rule in carcinoma.⁵

5. A carcinoma begins as a solitary focus, a nodule. It never grows in healthy tissues and organs. It does not possess a limiting capsule as does a benign growth, but is infiltrating like the roots of a tree. A carcinoma arises probably on the basis of an epithelial inflammation which stimulates the epithelial cells to proliferate. The chronic inflammation causes a decrease in the differentiation activity of the epithelial cells. The cells become atypical and their growth becomes uncontrolled.

The distinguishing characteristics of a malignant growth from a benign growth are the atypical epithelial proliferation, the uncontrolled growth, the invasion or infiltration of the parental tissue, the destruction of the parenteral soil, the irregular cell forms, the many and irregular divisions of the nuclei, the extension into the blood and lymph streams, the formation of metastases in distant organs, and finally the tendency to recurrence after extirpation.

6. An early carcinoma can only be discovered by advocating and insisting on periodic health surveys of our clientele.

Every recent mother should be examined within eight weeks after delivery. Should cervical erosions, polypi and ectropion exist due to unhealed lacerations or infections, then treatment should be immediately instituted to correct and heal this defect. Likewise, extensive relaxation of the vaginal outlet due to trauma or deficient involution with a tendency to descent of the uterus and vagina should be subjected to proper treatment. A gaping vaginal outlet permits extraneous matter to enter and ascend in the genital tract and thus cause infection and chronic irritation.

Following infections of the genital canal the patient must be instructed to return for control examinations at stated intervals. The best time is after cessation of each menstrual period. Evidences of chronic inflammation should be diligently searched for and if found they should be treated.

Should during a periodic health survey an inflammation of the cervix be found, it must be subjected to proper treatment. Should such infections resist the usual methods of local treatment, then amputation of the cervix must follow. All the tissues removed should be subjected to painstaking microscopic examination to rule out or in malignancy.

During such examinations the patient could also be instructed on the significance of abnormal genital bleeding, the importance of leucorrhea, the character of pelvic pain, and so forth. Above all, if a patient should consult us on account of genital bleeding and the cause be not evident, a diagnostic curettage and biopsy must be done in order not to overlook the underlying cause.

THE EARLY DIAGNOSIS OF CARCINOMA OF THE CERVIX.

The development of a cervical carcinoma according to macroscopical examination may be considered under three stages: the nodular, the ulcerative, and the necrotic stages. They may be observed in the three locations in which cancer usually originates—namely,

the vaginal portion of the cervix, the cervical mucosa, and the endometrium.

The diagnosis of the first or nodular stage of carcinoma of the vaginal portion of the cervix cannot be made by inspection or palpation because nodules of benign nature are seen more frequently than nodules of a malignant character. Harmless nodules are the follicular erosions. If they are punctured mucus exudes. Should the puncture cause bleeding then a diagnostic excision must be made, for the nodule is probably malignant. The subsequent histological examinations alone can give us a positive diagnosis.

The second stage of carcinoma is that of ulceration. It results from the characteristic and peculiar tendency of carcinoma cells to degeneration or decay. This tendency is possessed by all malignant growths and is caused by the poor blood supply. The ulcers are usually deep, are excavated, have sharp mouse-eaten like edges and an indurated periphery. The ulcerations must be differentiated from papillary erosions. If an ulcer of the vaginal surface of the cervix is touched with a cotton applicator and does not bleed it is probably benign. The carcinoma ulcer, however, bleeds on local irritation and the blood is arterial and the flow is continuous. A diagnostic excision should be immediately made and the excised tissues examined microscopically to determine its benign or malignant nature.

These two initial stages do not cause specific symptoms unless irritated locally as by a gynecological examination or cohabitation. A more or less profuse discharge without color or odor may be present, probably resulting from the co-existing inflammation.

The third stage of portio carcinoma shows friability or necrosis of tumor tissues. The tendency to central necrosis or friability is a characteristic sign of advanced cancer disease. It is always accompanied by a reddish brown or sanguinous discharge, and as infection rapidly

ensues, a cadaveric or putrid odor becomes associated. Hemorrhages at irregular intervals usually occur after local irritation.

The differential diagnosis of portio cancers comprises not only the follicular and papillary erosions, but also tuberculous ulcers, luetic chancre, chancroid and sarcoma. The microscope and blood tests will aid in the determination of the nature of the lesion.

The first sign of carcinoma of the cervical canal mucosa and the body of the uterus is irregular hemorrhages. These cancers are especially deceiving because the external os and the vaginal mucosa may appear perfectly normal. If under strictest aseptic precautions a sound is introduced into the cervical canal or the uterine cavity and a thin stream of bright red blood escapes from the cervical canal, then this observation may be regarded as highly suspicious of malignancy especially if the tricking of blood continues for some time after the manipulation. These signs are a contributory means of arriving at a diagnosis and should not be conclusive. Hence, dilatation of the cervical canal, diagnostic curettage and immediate frozen tissue examination must be done to render an immediate and correct diagnosis.

The differential diagnosis of corpus cancers includes myomata, accidents of pregnancy, abortion, adenomyomata, chronic hyperplasia of the endometrium, tuberculosis of the endometrium, chronic metritis, sarcoma, and so forth.

The early stages of carcinoma of the uterus—namely, the nodular and ulcerative stages—are symptomless. As soon as friability or necrosis occurs then hemorrhages appear. Hemorrhages from the uterus may take place as menorrhagias or profuse menstruations, or as metrorrhagias or hemorrhages independent of the menstrual flow. The former may be prolonged or too profuse menses, termed hypermenorrhoeas. Any increase in the menstrual flow either in quantity, duration, or frequency,

or metrorrhagia, demands thorough investigation to determine the underlying cause no matter at what time of life it appears. Hemorrhages occurring after the menopause very frequently mean cancer. All uterine bleeding at any period of life, either increased menstrual flow or bleeding that does not occur synchronously with the physiologic menses, must be viewed with grave suspicion until the cause has been proven to be benign. Every woman suffering from uterine hemorrhages should be examined and, if the cause does not become evident, the uterus should be curetted, suspicious looking nodules and ulcers should be excised and all the tissues examined microscopically. Such diagnostic curettages and excisions of tissues should always be done immediately.

A leucorrhea also requires investigation and immediate diagnosis. In the absence of recent infections and palpable tumefactions of the adnexa, the discharge probably comes from the cervix and is an expression of a chronic cervicitis which should be treated. If it does not respond to the standard medical treatment, especially electrocauterization, then an amputation should be done. The cervical tissue must always be carefully examined microscopically.

THE GROUPING OF CARCINOMATA OF THE CERVIX ACCORDING TO THE EXTENT OF THE GROWTH.

The diagnosis of carcinoma of the cervix would be incomplete without a determination of the extent of the growth. By physical, bimanual, and endoscopic examinations the answers to the following five questions should be given:

1. Is the cancer clearly localized in the vaginal portion, the cervical canal or the uterine body?

The portio growth having the size of a navy bean is probably clearly localized. Normal movability of the uterus would mean localization in the cervical canal or uterine body. It is determined by traction downward with a tenaculum forceps attached to the cervix. A normally movable

uterus may be displaced downwards until the cervix appears at the vaginal outlet without causing distress to the patient or using an unusual amount of force.

2. Does doubt exist on the absolute localization?

A doughlike consistency of the paracervical tissues and a decrease of mobility means beginning infiltration of the tissues adjacent to the uterus.

3. Are the parametria, the adjacent organs, or the regional lymphnodes involved and are the invaded structures (a) movable or (b) fixed?

Such involvement can only be revealed by recto-abdominal palpation, cystoscopy and protoscopy. Bullous edema of the posterior bladder wall means involvement of the vesico-uterine or vesico-vaginal septum. Thickening, infiltration and loss of mobility and elasticity of the anterior rectal wall and irregularity and edema of the rectal mucosa as elicited by rectal palpation and seen through the protoscope are indicative of extension of the carcinoma into the rectal wall. The hypogastric and iliac lymph nodes can be palpated through the rectum just beneath the brim of the pelvis at the bifurcation of the common iliac artery if the patient has been completely relaxed by an anesthetic.

4. Have metastases occurred in distant organs?

5. Do other grave diseases complicate the cancer as co-existent tuberculosis, diabetes mellitus, cardiac and nephritic lesions, and so forth?

The answers to these five questions enable one to group the carcinomata clinically. The indicated method of treatment is based on these groups.

We have adopted four groups, namely:

1. *The clearly localized carcinoma:* The tumor is the size of a navy bean and the uterus has normal movability.

2. *The borderline carcinoma:* There is a wide or peripheral invasion of the cervix or body of the uterus, a doughy consistency of the paracervical tissues, and a decreased mobility. A pull on a tenaculum forceps attached to the cervix does not result in a complete downward displacement. A uterus normally movable can be displaced downward to the vaginal introitus without any resistance being offered.

3. *The inoperable carcinoma:* Infiltration of one or both parametria with or without regional lymphnode involvement, with or without invasion of adjacent organs, but the structures are, as a mass, still movable.

4. *The terminal carcinoma:* This tumor is characterized by fixation of tissue and wide local extent of the disease, "the frozen pelvis," and distant metastases.

5. The complicated carcinoma is one associated with general disease that are considered poor surgical risks. It would contraindicate surgical eradication.

THE TREATMENT.

The grouping of primary carcinoma enables one to determine the indicated method of treatment. Group 1 cases are treated either surgically or with radium. Group 2 cases are given radium and roentgen-rays according to our combined method. Group 3 cases indicate radium and roentgen-ray therapy; and Group 4 cases should be treated palliatively. A cancer that is fixed always offers an unfavorable prognosis and therefore such a case should not be unnecessarily subjected to expensive and extensive treatment.

Before subjecting a patient with uterine cancer to operation we must always determine whether operation could be successfully performed. Operability depends:

1. Upon normal mobility. Mobility is normal if the uterus can be pulled down to the introitus vaginae without resistance with a tenaculum forceps applied to the cervix.
2. The cervical canal must be patent. If

it is not patent pyometra may exist. A sound inserted into the uterine cavity through the cervical canal gives evidence of presence or absence of pyometra.

3. Afebrility of patient. If fever is present the surgeon should wait 14 days after temperature has subsided before operating.
4. Absence of pathogenic bacteria. If the latter are present, operation is contraindicated. The Phillip-Ruge test is probably the simplest. Ten c.c. of blood taken from the patient's arm vein are inoculated with the cervical discharge. If cultures grow within 24 hours pathogenic bacteria are present. If growth did not occur then operation may proceed without worry about a subsequent septic peritonitis.
5. Lastly, determine the surgical risk the patient offers. If all of these five factors can be answered in the affirmative, then operation is safe. If only one of the factors should be negative operation is absolutely contraindicated.

The radiological treatment of carcinoma of the uterus consists in the intrauterine insertion of 50 mg. of radium element for 30 hours within weekly intervals repeated three times. This amounts to a total of 4,500 milligram element hours, a dose which suffices for the average case. As it is impossible in the Groups 1 and 2 cases to determine whether the parametria or regional lymph nodes are involved, and since such a possibility may be present, these regions are treated with either the short wave roentgen-rays or the radium pack. The factors of the roentgen-ray treatments are 211 kilovolts, 65 cm. or 26 inches focus skin distance, 25 milliamperes load, 0.75 mm. copper plus 1.0 mm. aluminum filter, fields 15 cm. wide and 20 cm. high, duration three to five times 10.5 minutes to each field depending on the size of the patient. The seances are given three to five days apart. Two to four fields are used. With an antero-posterior diameter of 17 to 21 cm. two fields are used, with an antero-posterior diameter of 22 to 24 cm. three fields are used, and with an antero-posterior diameter of 25 and 26 cm.

four areas are used. Using a table of equal intensity curves obtained in a water phantom one can calculate the number of fields and the duration of the treatment for each case. It is recognized that an homogenous radiation of 800 "r" throughout the pelvis will probably accomplish the arrest of the growth. The radium pack consists in an application of 24,000 mg. element hours at 10 cm. focal skin distance through an anterior and a posterior portal.

The palliative treatment has for its main object to render the tumor area aseptically clean. It is a known fact that internal incurable carcinomas in an aseptic site may progress for many months without complaint, and death comes as a release through exhaustion and cachexia, accompanied by comparatively little pain. In Group 4 carcinomas we therefore gently remove the necrotic tissue carefully and apply thorough methods of combating infection. A 1200 mg. element hour application of radium arrests the bleeding in a large number of such cases. The application of acetone as introduced by Gellhorn is especially beneficial. Adequate drainage and vaginal douches are useful in the in-

and ulceration into the rectum are treated by the daily administration of mineral oils to which agar may be added, to render the stools a soft consistency. An ounce or two ounces in an equal amount of cream should be taken each night. Each bowel evacuation should be followed by a rectal irrigation with normal saline solution until the water returns clean. If an obstruction should ensue then a colostomy is indicated. Invasion of the pelvic nerves with cancer or pressure on the nerves by the growth probably indicates coal tar products and finally morphine and its derivatives.

The correct treatment of carcinomata therefore depends on: 1, An early diagnosis; 2, a grouping of the cases according to the extent of the growth; and 3, on the application of the correct method of treatment.

The five year end-results obtained in 332 cases of primary carcinoma of the uterine cervix treated from 1914 to 1923 inclusive with the combined radium and roentgen-ray method gave the following results:

Group	1.	2.	3.	4.	Total
Total number	23	48	161	100	332
Five year healings	18	20	20	0	58
Per cent	78.27	41.68	12.42	0	17.50

tervals between the acetone applications. If the bladder should become involved and secondary infection ensue, then vesical irrigations should be used. Boric acid solutions followed by 2 per cent mercurochrome or 2 per cent silver nitrate instillations are the solutions used. The mercurochrome or silver nitrate should be retained for about one hour. The internal administration of diuretics, acids and alkalies is not necessary. A pain in one side of the pelvis is frequently caused by a compression of the ureter by the growth. Ureteral catheterization and pyelogram will clear the diagnosis. If obstruction is present, then dilatation and drainage of the kidney pelvis will relieve the patient. Invasion of the rectum

There were 71 cases in Group 1 and 2 which would have been submitted to surgical eradication in a clinic not provided with a radiological division. In these cases treated with radiations we obtained 38 five-year good-end results, or 53.52 per cent. The cases of Group 4 characterized by fixation of the tumor have all succumbed. They give an absolutely bad prognosis. On the other hand, it may be followed that radiation therapy in uterine carcinomas gives results which compare well with those obtained from surgical methods. The inherent dangers of operation in uterine carcinomata can be practically eliminated by observing the contraindications to the operation as cited before.

CONCLUSIONS.

1. The frequency and preponderance of carcinoma of the female reproductive organs has been demonstrated by statistics.

2. The observation has been discussed that the first stages of carcinoma of the uterine cervix do not cause symptoms and that nodules and ulcers are more often benign than malignant. When a cervical cancer causes symptoms then it probably has already progressed to an advanced stage. Hence the microscope must be used to differentiate malignant nodules and ulcers from similar benign conditions.

3. The pelvic examination of all recent mothers and the inclusion of pelvic examinations in periodic health examinations are the only means of detecting chronic inflammations of the cervix which should be treated whether they cause or do not cause symptoms. Chronic cervicitis is probably the period of advent of cervical carcinoma.

4. The indications for the standard methods of treatment, that is, surgery or radiation, should be based on the determination of the extent of the disease as done in the clinical grouping of servical carcinomata.

5. The contraindications for surgery have been given. The factors employed in radiation treatment have been briefly mentioned. The palliative treatment of the incurable stages has been described.

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DISCUSSION.

Dr. H. W. Kostmayer (New Orleans): It was a great pleasure to listen to such a masterly presentation of a subject which is so interesting because it is so important. Cancer is so very frequent and it has proved so intractable to all methods advocated for its management that I do not feel that too much can be said upon this theme. I was particularly struck by the statistics quoted by Dr. Schmitz for his own use of radium and roentgen-ray therapy. I had occasion to say recently, in addressing a group of post-graduate students, that in the twenty years of my medical practice, nothing new had been brought out concerning cancer except the use of radium and roentgen-ray in its management. I do not believe that statement can be challenged. We know as little as our masters did about the disease itself, but we do know better how to manage it, thanks to these new agents. I have gone through the period of treatment by vaginal hysterectomy, through the period of operation by the Wertheim technique, when we were delighted if the patient survived the operation, quite aside from what happened to her later, through the period of Percy cauterization, of colloidal copper, of zinc chloride and what not. But not until radium and roentgen-ray were introduced was I able to view a new cancer patient with anything but dread. A recent report issued by the College of Surgeons gives, from one of the New York Clinics, a 63 per cent salvage of early cases of these methods. Compared with the results from surgery, that is so remarkable a showing that there can be no longer any question about what method one ought to employ. I want to emphasize, however, that these remarks do not apply to carcinoma of the fundus. If that condition is seen early enough, surgery is the accepted treatment for it, and will give a high percentage of cures. The results with radium and roentgen-ray are nothing like so good. But in carcinoma of the cervix, the day is practically past when surgery can be considered for any case, no matter how early it is seen.

Dr. W. E. Levy (New Orleans): What I have to say may be irrelevant to the subject of radium and roentgen-ray in the treatment of carcinoma of the uterus, but I am speaking from the standpoint of the obstetrician. I am glad Dr. Schmitz brought out the point of the Hunner cauterization of the cervix as a postpartal measure, and I want to urge that it be done routinely. The patients on our service are examined five to six weeks postpartum, and the slightest ectropion or laceration, or the presence of any discharge, is a signal to us to cauterize the cervix promptly and thoroughly. The patient is instructed to return in from two to three weeks, when the procedure is repeated if necessary. Neglected cases, by

which I mean multiparae whom we have not delivered originally, are treated in the same way, except that it is usually necessary to admit them to the hospital, dilate the cervix under anesthesia, and employ the high tension cautery. The results of this method, as Jennings Litzenberg said in his Chairman's address at the recent meeting of the American Medical Association, must, just now, be anticipated rather than collected, but I agree with him, that it is not too much to say that if this method is followed routinely, in the years to come, we shall reduce our cases of carcinoma of the cervix by fully 80 per cent.

Dr. Joseph Cohen (New Orleans): I am inclined to believe that the essayist's statement to the effect that benign lesions of the cervix do not bleed was rather misleading. A gonorrheal cervicitis is not malignant, but it will bleed and bleed freely when you apply an applicator to it. As far as treatment by radium is concerned, I wonder whether large doses are not more indicated than small doses over a period of time. Radium has a preferential action on cancer tissue, but it also acts on normal tissue, and while it may inhibit the growth of abnormal cells, some statistics would lead us to believe that repeated small doses influence the activity of normal surrounding tissue. We must all of us get together and preach the gospel that cancer, seen and treated early enough, can positively be cured; women are too prone to believe, once they are told they have cervical cancer, that death is inevitable, whereas the large number of reported five-year cures proves that this is definitely not the case. It can be cured, if taken in time, just exactly as appendicitis can be cured, if taken in time. At the Memorial Hospital in New York, surgery has not been employed in this condition for the last five years, and radium has been used, in cancer of the fundus as well as of the cervix. Greenough's report at the Lake Mohonk Cancer Conference stated that where surgery was employed, there was an inevitable mortality of one case in every three; where radium was used, there was no initial mortality, and the results, over a five-year period, were better than when surgery was used. This being the case, there can no longer be any question that when carcinoma is present, whether of the cervix or of the body, only radium plus roentgen-ray should be used.

Dr. Henry Schmitz (closing): The most important consideration in carcinoma of the cervix is early diagnosis. The results of prognosis and treatment will begin to improve as soon as the patients are seen in the first stages; at this time 80 per cent can be cured. How are we to achieve this? Only by routine post-partum examinations, and by repeated examination after infections, for

one thing, and by periodic health examinations for another. The latter is the task of the general practitioner even more than of the specialist, and no health examination should be considered complete unless it includes a pelvic examination. The next consideration is to group our cases properly according to the extent of the growth so we may make use of the proper treatment. If the proper treatment is employed, then it will be found that the confidence of the patients will return, and they will submit to the methods of treatment we propose. At least that has been my experience. I agree with Dr. Kostmayer that carcinoma of the fundus should be treated surgically. I mentioned corpus cancer in the paper only as a matter of diagnosis and not with the implication that radium should be employed in its treatment. Carcinoma of the fundus can be safely handled by surgery, i. e., vaginal or abdominal hysterectomy, as such cancers form metastases in the late stages of the disease.

As to the question of bleeding in acute gonorrheal cervicitis, there can be no possible confusion between that condition and malignancy. The former carries its diagnosis on the surface and a smear will promptly confirm it. I was speaking only of chronic infections with erosions whether papillary or follicular. Acute infections, as is well known, will cause uterine bleeding, but the history of the recent exposure and examination should not leave any doubt in our minds.

ENDOMETRIAL TRANSPLANTS.*

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NEW ORLEANS.

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The term endometrial transplant can be defined as a proliferating growth of true endometrial tissue that has been carried away from its normal location and transplanted in some other locality, where it continues to behave as does the normal uterine mucosa, by passing through the several changes incident to menstruation and forming decidua in pregnancy—it is synonymous with the term endometriosis and may be considered under two broad classifications; (1) endometrioma, meaning a new growth or formation of true endometrium, not connected with the uterine

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mucosa and (2) adeno-myoma, which refers to endometrial glands deep down in the uterine musculature and even in the serous coat, which can be shown to be directly connected with normal mucosa. "Chocolate cysts" was a term formerly applied to these transplants on the peritoneal structures, before their nature was fully understood.

HISTORY.

These aberrant growths of uterine mucosa have been observed for many years and described under several headings. In 1860 von Rokitsky¹ described an adenomyoma of the uterus and 1893 von Recklinghausen² published several papers dealing with the subject and attributing their origin from "rests" of Wolffian Ducts. Cullen³ in 1896 presented his first of many articles on adenomyomas describing one arising on the round ligament; he really laid the foundation for our first knowledge of endometriosis by proving that adenomyomas were not the product of Wolffian "rests" but were invasive growths of uterine mucosa. However, Sampson,⁴ in 1927, explained and proved that this invasive growth was due to "emboli" of uterine mucosa gaining entrance into the venous sinuses during menstruation and being transplanted at variable distances beyond their normal location, deep in the myometrium.

Russel⁵ in 1899 described an ovary which on microscopic study showed the presence of uterine mucosa embedded in smooth muscle,—he believed that the abnormally located tissue was a displaced portion of Muller's duct and Cullen was likewise inclined to attribute them, tentatively, to such an origin.

Sampson⁶ in 1921 analysed 23 cases in which endometrial transplants were present in the ovaries and in 1922 published an article in which he drew attention to the frequency of these transplants and advanced the most plausible explanation of the histogenesis of endometriosis in the

peritoneal cavity, as due to regurgitated mucous membrane through the Fallopian tubes during menstruation.

THEORIES OF ORIGIN.

Sampson's transplanation theory, mentioned above, of the origin of these new growths is very generally accepted both in this country and abroad. He contends that they represent growths of bits of actual endometrium which have been regurgitated backward in the menstrual blood through the tubes and find lodgment principally on the pelvic structures, especially the ovaries, but also, in other organs in the peritoneal cavity.

The basis of his opinions are:

1. The implants are lined with columnar epithelium which is surrounded by a stroma like that around the glands of the endometrium.
2. During the menstrual period hemorrhage occurs into the gland spaces and the surrounding stroma.
3. They are of frequent occurrence in women between 30-50 therefore developing during menstrual life only.
4. Menstrual blood is often seen coming out of the ends of tubes, containing particles of endometrial glands and stroma, during operations at menstrual period.
5. Endometrium has been demonstrated lying free in the lumen of the Fallopian tubes.
6. The implants are frequently found in different sizes and degrees of development indicating repeated implants from the original source or from other transplants.
7. The cast off menstrual mucosa has been shown to be living and capable of growth by cultivation in vitro.
8. The greatest number of these implants occurred on that portion of the ovary in contact with the ostium of the tube.

9. Jacobson⁷ has experimentally reproduced lesions in rabbits similar to endometrial transplants by the auto-plantation of bits of uterine mucosa on the tissues of the pelvis.

10. Endometrial growths similar to those of the ovary and peritoneum have been frequently found in the scars of the abdominal wall, following an operation in which the uterus has been opened or handled and an opportunity afforded for the implanting of uterine mucosa in the tissue of the abdominal wall.

11. Actual demonstration of the dissemination of endometrial tissue during menstruation into the venous circulation either from the mucosa lining the cavity or from ectopic endometrial tissue in the myometrium.

There have been other theories advanced. Von Recklinghausen ascribed the glandular elements in adenomyomata to "embryonic rests" attributing those centrally located in the uterus to remnants of Muller's ducts and those on the serous surfaces to remnants of Wolffian duct. Pick partly agrees with him on account of the close developmental relationship of the Wolffian and Mullerian ducts.

Meyer has advanced a serosa theory for their origin which is based on the fact that all epithelia of the female genital system are derived from the celomic epithelium of the urogenital folds which in turn is a modification of the primitive peritoneum. These epithelia comprise the germinal epithelia of the surface of the ovary, the lining of Graffain follicles, the ovaries themselves and the invaginations of Muller's duct represented by the endosalpinx, endometrium, endocervix and vagina. Therefore, the entire epithelial apparatus of the female internal generation organs has a common ancestor in the peritoneum. Since it has been shown that this celomic epithelium does not exhaust its developmental potentialities it may awaken

in later life to new activity and produce differentiated structures identical with those it produced in embryonic life. This being so, the germinal epithelium on the surface of the ovary may invade the ovarian substance and create endometrium like structures which possess both the morphology and function of true endometrium resulting in formation of the hemorrhagic or chocolate cyst. It is also believed by Meyer and others that the pelvic peritoneum may at any point develop this innate quality and produce the so called ectopic endometrioma. It is of note however, that the structures in the male having a similar embryologic origin never show similar metaplastic changes.

Novak⁸ does not subscribe to the possibility of retrograde menstruation and implantation of endometrium as he believes that such particles are dead, but believes the original source of the endometrioma is from the germinal epithelium of the ovary and that it may be disseminated from them upon the peritoneal structures.

Halban⁹ does not accept either theory but believes that all heterotopic endometrium wherever formed are metastatic growths originating in the endometrium and reaching their destination by way of the lymphatics.

In addition there have been many theories advanced as to the exciting cause that stimulates the endometrium to activity: the chief ones are (1) inflammatory irritation and (2) biologic stimulation due to excess of ovarian hormone. However, no satisfactory solution has been reached. Certain observations as to the incidence of the condition are important to stress:

1. Endometriosis is most common in women between 30-58 years of age although a few have been reported in girls and very elderly women.

2. More frequently seen in white women than colored.

3. In barren women or women who have had but one pregnancy than in those who have borne many children.

4. In women who have normal tubes rather than with salpingitis.

5. In uteri the seat of myomata.

6. Often in retro-displaced uteri.

The implants have been found in a variety of locations which Gardner¹⁰ has tabulated as follows:

1. Body of uterus, diffuse adenomyoma.
2. Recto-vaginal septum.
3. Fallopian tube.
4. Ovary, on the surface or actually in the ovary.
5. Round ligament, both intraperitoneal and inguinal portions.
6. Utero-ovarian, utero-sacral and infundibulo-pelvic ligaments.
7. Sigmoid flexure of colon.
8. Small intestine.
9. Vermiform appendix.
10. Omentum.
11. Umbilicus.
12. Abdominal well (post-operative scars).
13. Vulva and vagina.
14. Inguinal hernia.

With such a wide spread distribution the symptoms produced thereby would be so varied that they can not be discussed with much detail; however, the one outstanding symptom is pain, localized in the area of the implants and most severe before and during the menstrual periods. Dysmenorrhea is a usual symptom. If there are lesions on the intestinal wall the symptoms may be of rectal or gaseous distention or even partial obstruction, before and during the menses.

There are certain gross pathological appearances that are fairly common in all locations but those characteristics vary with the stage of menstruation. During active menstruation the lesions on the peritoneal surface appear as light red spots of blood cysts some of which may rupture; later these spaces appear as bluish vesicles. The entire pelvic structure may be matted together by an inflammatory and reparative reaction resulting from the monthly irritation of the menstruating foci associated with hemorrhage—in widely disseminated areas brown or blackish brown discolorations on the peritoneum are some times noted resembling some what the spattering one might produce by shaking a brush of brown paint in the abdomen.

The importance of these aberrant new growths to the general surgeon and especially to the gynecologist cannot be over estimated and Sampson reported their presence in 43 per cent of the abdominal operations he performed. While this is considerably higher than our studies have shown, at the same time, he being particularly interested in this topic has made a more intensive study than possibly any other one man and therefore his statistics should not be open to question. During the last four years at Touro Infirmary there have been removed for study ovaries from 772 cases on which as a result only of routine examination and not a special study, 61 cases of endometrial transplants have been found. During the same period there have been 9 transplants discovered on the tube, 2 on the serous surface of the appendix and 2 in the abdominal wall following removal several years previously of the uterus. We have also studied during this time 14 adenomyomas located in the uterus itself.

A consideration of endometrial transplants and especially the fact that Sampson has shown that during the menstrual epoch the endometrial tissue ruptures directly into a venous channel, it is rather surprising that secondary endometriomas

do not arise in distant parts of the body. There is no record of such new growths having been discovered in the lung and such an occurrence would not be surprising in view of the fact that these endometrial cells gain entrance into the venous circulation and are ultimately filtered out in the lung. This serves to emphasize the fact that while these endometrial cells have a vegetative characteristic enabling them to grow out side of their normal location, they do not show any other evidence of malignancy which would result in general metastases and death. All the transplantations that take place are a result of mechanical distribution and are not the result of the invasive characteristic of the cell itself.

It is another striking fact that the growth of these misplaced epithelial cells take place only in tissues of the same embryologic origin.

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DISCUSSION.

Dr. Urban Maes (New Orleans): There is little left for the general surgeon to say when the ground has been so completely covered by the histo-pathologist. Painful abdominal scars first roused my interest in this subject. I was called upon to treat such a condition and I excised the scar without suspecting the nature of the trouble. When the laboratory reported that an endometrial transplant was present, I went back over the history, which included the performance of a supravaginal hysterectomy some months before, and found that the periodicity of the pain and discharge was quite marked, although I had entirely overlooked it, as had the patient. The condition is of interest to the general surgeon, not in

all of the fourteen locations in which Gardener describes these growths, but in three, the abdominal wall, the appendix and the bowel. In the abdominal wall these growths have hitherto been called infections, unabsorbed suture material, cystic cavities, etc., whereas their periodicity and their contents will now identify them absolutely for the surgeon if only he will bear the possibility in mind. I have found one or two of these transplants in the appendix, and if I had not been familiar with the work of Seelig, I should have been inclined to believe them malignant. Possibly such growths explain the cases we have seen in the past, where malignant disease of the appendix was diagnosed, but the patient never had a recurrence. Transplants on the bowel are confused in a certain number of cases with malignant disease, and large resections have been done unnecessarily through failure to recognize the true histo-pathology present. Possibly a surgeon not familiar with the condition may have to depend upon a rush diagnosis for help, but to me the chief distinguishing point is that they spread from the serous surface inward, whereas true carcinoma spreads from the lumen outward. I would caution you to bear this possibility in mind, and note in your history whether there is a story of periodicity and in your examination whether you can detect the characteristic cystic formation. The treatment is removal in most instances, and after that, if we are sure that we are dealing with an endometrial transplant, the subsequent course would be governed by subsequent events. Recurrence calls for castration, for invariably these growths retrogress and disappear with the disappearance of ovarian tissue and the stoppage of the ovarian hormone, because the stimulus to their existence is gone. It has been suggested that either radium or X-ray be employed in their management, the idea being to diminish the ovarian stimulus by these means, but I do not find in the literature that either method has been eminently successful.

Dr. P. B. Salatich (New Orleans): I should like Dr. Lanford to say a few words on the subject of the possibility of malignant degeneration in these endometrial transplants. If these growths are on the ovaries or tubes, their complete removal is fairly simple, but they appear in other, more dangerous places. I have in mind a case in which I tried to be conservative, a young woman with extensive endometriomata involving both ovaries and a considerable portion of the bladder. Because of her youth I did not want to castrate her, so I removed as much of the growth as I could, leaving, however, a few nodules, particularly on the bladder. Will that condition recur, and is it likely to become malignant?

Dr. D. I. Hirsch (New Orleans): I have been interested in this subject ever since Dr. Cullen

began to work on it many years ago. I want to add to the important sites mentioned by Dr. Maes as of interest to the general surgeon the posterior cul-de-sac. Growths in this region can be very confusing because of their resemblance to malignant tumors, and unless the symptomatology and histo-pathology are kept very clearly in mind, unnecessarily radical surgery is going to be done.

Dr. T. B. Sellers (New Orleans): I wish to present a case of endometrial transplants. Mrs. B. Q. a white female, aged 30 years, consulted me because of extreme nervousness and dysmenorrhea before, during and after her periods, associated with unbearable sick headaches. She was the mother of three children, and this story dated from the birth of her first baby in 1923. Her periods had begun at 16; they were of the 28 day type and were irregular; at times she missed 3 or 4 months. Physical examination showed a fairly well developed but poorly nourished woman weighing about 90 pounds. The heart and lungs were negative, the abdomen of the scaphoid type, the reflexes normal. The pulse was 80 and the blood pressure 100/75. All laboratory tests were normal except for a hemoglobin of 60 per cent. Vaginal examination showed a lacerated perineum, a cystocele, a lacerated cervix, a second degree procidentia, and a uterus much larger than normal and retroflexed. The adnexa seemed negative. The vaginal repair work was done, and when the abdomen was opened through a median incision, the uterus was found to be two or three times its normal size, smooth and mottled in appearance, and fairly firm to the touch. After some hesitation I finally decided to do a supra-vaginal hysterectomy, and was justified in my decision when the laboratory report showed endometrial transplants present. I report the case merely to show how easy it is to overlook this type of pathology; I am sure that I have overlooked it myself in the past.

Dr. J. A. Lanford (closing): Dr. Maes has made an important point when he stresses the possibility of confusion between endometrial transplants and malignant growths, and he has emphasized the chief distinction, that carcinoma, or epithelial malignancy, of the bowel originates within and works out, whereas endometrial transplants originate on the serous covering and infiltrate to a varying degree, although the musculature is never very deeply involved. Observation of the contents of these cystic cavities, which are always entirely characteristic, will always make the distinction clear, but it is well, if there is the slightest doubt, to resort to rush diagnosis by the pathologist, for the error is far too productive of harm to be permitted to occur. As to Dr. Salatch's question about the possibility of these transplants becoming malignant, if there

is anything to the theory of misplaced tissue, we must assume that they may develop malignant changes. On the other hand, I have never seen this occur, nor am I aware of any report of its happening. Growths of this sort which occur in the uterine wall may be confined to one special area or may become very diffuse; if they work their way back into the rectovaginal septum, they certainly bear all the hallmarks of malignancy, but they remain histologically benign and the pathologist can make the distinction if the clinical surgeon cannot.

A CLINICAL STUDY OF STERILITY.*

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NEW ORLEANS.

Much has been said, but much more remains to be said, ere finis is written to this most interesting chapter of gynecology. However, it is not my purpose this morning to enter very deeply into a theoretical discussion of this subject, and to discuss in detail the relative values of various therapeutic measures, but rather to treat this subject from a clinical viewpoint and study, and to show the general outlook with which a case of sterility must be approached,—approached as scientifically as we are now able to do, and not by slipshod, hit-or-miss methods.

Now, if one assumes a marriage to be sterile, when after a period of three years, conception has not occurred, and if one is cognizant of the very definite fact, as is fully proven by competent observers, that in our country, sterility, especially among the so-called middle and upper classes, is on the increase, we are at once confronted with a most vital medical and sociological problem. According to Child, "While sterility in its broadest sense implies a condition in which the woman does not conceive, or if conception occurs, is unable to bear a viable and living child, there is a very wide difference between incapability

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†From the Department of Obstetrics, Touro Infirmary, and the Department of Obstetrics, Tulane University.

of conception and incapability of reproduction."

Naturally it requires two factors to make conception possible, that is, the healthy male element must be placed in that position from which it is able to make its way to a union with a healthy female element. In other words, according to Giles, we must investigate the various features that affect the transition of spermatazoa from the vagina to the Fallopian tube, the possibility of the fertilization of the ovum, and the transit of the oosperm from the ovary to the uterus. These factors will at once give us two distinct viewpoints, viz., that sterility must be studied both in the man and in the woman, from an anatomical and functional angle. And so we must study each childless marriage with these points well in mind.

It is always my custom to have the male partner studied first, for I believe male sterility is more frequent than female. As this is always done for me by a competent genito-urinary specialist, upon whose report I can place absolute reliance, I shall not go into any great detail here, but merely summarize the necessary essentials.

Dickinson and Cary emphasize the importance of examining the husband first by stating: "Any tubal testing or operative procedure for sterility that is done on a wife, before the present condition of the husband is determined, should, in these days carry the stigma of mal-practice."

In the first place, it is easier to study the male and to arrive at a more definite decision than in the female. A careful history is essential as regards specific disease, for gonorrhea will account for 50 per cent to 70 per cent of the cases of sterility in the male. He must also be questioned as to his ability to perform the sexual act, and must be studied anatomically for infantilism of the genitalia or other congenital defects, for inability to deposit spermatazoa well up in the vagina is essential. The re-

action of the vagina is normally acid, due to the presence of lactic acid, whereas that of the cervix is alkaline. As the semen is alkaline, one can readily see that in a hyper-acid vagina, wherein the semen is not deposited in the seminal lake, in the proximity of the alkaline cervix, this hyper-acidity can kill the sperms. Cases of this type sometimes conceive when an alkaline douche is given just before intercourse.

Secondly, the male secretion must contain a sufficient number of spermatazoa, which are not alone actively motile, but are also morphologically correct. Now being well assured of the condition of the male, and satisfied as to his fertility, if the above mentioned prerequisites are fulfilled, we now turn to our study of the female.

It is here in the study of the female that one's gynecological and general medical knowledge may be taxed to the utmost, for the angles of the case are many. It is my custom, after taking a most careful and detailed history, to study my cases anatomically, pathologically and physiologically and to attempt to classify them as such.

Anatomically a survey of the genitalia is made by means of a vaginal examination and various diagnostic aids. By a vaginal examination, the position and size of the uterus, and the presence of various gross congenital or acquired anomalies are determined. While a great many authorities claim that retroversion is a cause of sterility, I am not at all firmly convinced that it alone is the etiological factor, for I have seen many cases wherein a marked retroversion existed, become pregnant. Also too much stress should not be laid upon infantilism of the uterus, unless a coincident examination of the tubes be made according to either of the two methods I am about to mention. These methods are the tubal insufflation test of Rubin, and the lipiodol injection of the uterus and tubes. It is not within the province of this brief paper to enter into a discussion of the relative merits of the afore-mentioned procedures, but merely to

mention them as adjuncts in studying the anatomy. As at the present moment, we are discussing anatomical and not pathological sterility, it is not necessary to mention the contra-indications. This much might be added, however,—lipiodol offers a means of exact diagnosis as to the point of stenosis in the tube, whereas air alone merely tells one that a block exists. However, insufflation is a valuable adjunct in the opening of a fair percentage of occluded tubes.

From a physiological standpoint, I consider the history of the patient's menstruation and her basal metabolism rate. According to Rubin, amenorrhea associated with sterility is not uncommon and he reports it in 74 of 1450 cases. He further adds that any measure which restores the menstrual function, greatly improves the prognosis of subsequent conception. As a means to accomplish this, other than by the roentgen-ray, as suggested by Rubin, and one which I believe is infinitely safer, is that suggested by Litzenberg, viz., the use of thyroid extract. Hypothyroidism, or myxedema, and sterility are very closely related. Litzenberg, to my mind and experience, has shown very definitely that there is an inter-relationship between the activity of the thyroid gland and the ovary, and states that even the lesser degrees of hypothyroidism are apparently the cause of sterility. He adds that a normal basal metabolic rate is also apparently necessary to conception and normal pregnancy, and cites that in 44 cases seeking relief from sterility, that 22, or 50 per cent had a metabolic rate of minus 10 or below.

Now, if there is an interdependence between ovulation and menstruation, and if thyroid therapy will accentuate menstruation, may we not assume that ovulation is also accentuated, thus overcoming, as it were, one of the functional causes of sterility.

It is just this group of cases which I classify as functional or physiological, for,

in addition to a low metabolic rate and amenorrhea, may be added symptoms of obesity, low pressure and a sub-normal temperature, and in the line of therapy suggested by Litzenberg, we hold forth to these, a fairly high percentage of cures.

Likewise, under physiological sterility, may be grouped those cases of incompatibility between the two elements, and also those rather obscure cases wherein the diet, with a deficiency of vitamin E, is the theoretical basis. In the former group, the basis of the incompatibility can to a great extent be cleared up, by the employment of the Huhner test, whereas in the latter, in spite of the striking results of animal experiments, it is a bit too soon to draw any definite conclusions as to the human.

In the pathological group, I place those cases of sterility which are due to an endocervicitis, infectious occlusion of the tubes, ovarian tumor, fibroids, etc. Endocervicitis is a condition very easily overlooked in the search for a cause, but nevertheless is a frequent etiological factor, particularly in cases of the so-called one child sterility. Fulkerson in his study of sterility says that endocervicitis accounted for 10.4 of the cases. Kahn makes the statement that the cervix in sterility is often the etiologic factor than are the tubes. According to Kurzok and Miller, the semen exerts a lytic action on the normal mucin of the cervix. "Tests made with mucus from a patient with a leukorrheal discharge, due to a lacerated cervix, and from one with acute gonorrhea, indicated that the digesting action of normal semen is markedly diminished or stopped by the presence of pus in the mucus." It is in endocervicitis that we are now able, by means of the cautery, to eradicate as a definite cause, and to date I have four cases of the so-called one child sterility, each of whom had an endocervicitis, and who, after treatment with the cautery according to the method of Hunner, have conceived.

The various surgical method for the relief of the other conditions, are fairly set procedures; I do not think that a discussion of their technique and relative merits is within the scope of this paper.

Before concluding, I should like very much to present quite a typical case illustrating our clinical routine:

Mrs. A. C. She was first seen on October 18, 1926. Aged 26 years. Married one year. She had never conceived. Menstrual history: Last period on August 11, 1926; duration four days. No pain at any time. Patient gave a history of varying periods of amenorrhea, the longest being eight months. Passes clots at menstrual time.

The physical examination revealed a short, stout individual. The uterus was a bit enlarged and retroverted. Blood pressure 100/76. Temperature 97.5 degrees.

Two weeks later the patient reported she had menstruated. An interval of 2½ months since the last period. Nothing more was seen of her until June 24, 1927, when she returned to the office stating that her last period was on May 18. She was now willing to undergo a complete examination as to the reason for her sterility.

As is our custom, the husband was examined first, and we received a report showing that he had many actively motile and morphologically correct spermatazoa.

From the clinical side, I was under the impression she was one of the "physiological group," but wanted to be sure she was anatomically correct. Hence, I recommended a lipiodol injection of the uterus in addition to a B.M.R.

The roentgen-ray revealed a normal uterus and normal, patulous tubes. Twenty-four hour plate showed the lipiodol free in the pelvis. The B.M.R., however, was of greatest interest, it being a -39. As a result, on June 29, she was started on thyroid extract, grains .5, four times a day. On July 3, she menstruated. When seen again on September 22, she had every typical sign of an early pregnancy. On November 10, 1927, she felt life, and is now the mother of a female child.

This case is but one of several wherein thyroid therapy has been of great value. While perhaps a bit irrelevant to the title, I might add that to date I have on record some eleven cases who have had one or more children, but have since developed an amenorrhea. All of these presented the

characteristically low B.M.R. and were relieved and returned to regularity by means of properly regulated doses of thyroid extract.

In concluding, I should like to state that all cases of sterility should be classed as anatomical, physiological, or pathological, and as such, should be studied. Furthermore, the male should always be studied first, as he is the more frequent cause of a sterile marriage.

It is to be hoped that in the near future that new advances will be made and a much larger proportion of cures be effected.

DISCUSSION

Dr. A. Jacobs: In the olden days it was considered a great sin for a woman not to be able to conceive; the male was entirely exonerated. Up to quite recently she was executed, or at least operated on, without a proper trial because she failed to bear children. All sorts of surgical procedures were undertaken for purely empiric reasons. I agree with Dr. Levy and I think everybody else does that the male should be thoroughly studied in every case of sterility before the detailed study of the woman is undertaken. The gynecologist should be able to use the microscope himself in order to test the motility of normal spermatazoa. The acidity of the vaginal secretions varies not only in different individuals but in the same individual at different times, and the gynecologist must therefore be able to aspirate semen from the vaginal vault and to recognize under the microscope what the motility of the spermatazoa is at different times; that would settle the question of the responsibility of the vaginal secretions. Retroversion is responsible for sterility in about 14 per cent of all cases, and whether it is congenital or acquired, it is responsible for the same reason, that either the undeveloped uterus or the chronically congested uterus is one whose function is impaired and so one unfitted to undertake the burden of gestation. A well fitting pessary will bring the uteri up. Antelexion is also often considered responsible. This is not because of the angulation but rather because an immature uterus, as all antelexed uteri are, is unfitted for this special function. In cases of infantilism, however, a bad prognosis must not be given too rapidly. Dr. Child mentions a case in which the uterus was no larger than a walnut and the distance between the os and the fundus about 4 cm. He

rendered an unfavorable prognosis, but that patient menstruated normally and bore two normal children.

Dr. Hilliard E. Miller: Fully 10 per cent of the young women we see in private practice today are consulting us because of sterility, and for that reason the subject is a very important one. We follow practically the same routine that Dr. Levy has outlined in attempting to determine the essential cause of the condition, believing that in each instance the etiology is individual. The examination of the male is extremely important, and in about 12 per cent of the cases I have seen the male was at fault. I remember in this connection 2 or 3 cases examined by the urologist. In each instance it was reported that a generous quantity of spermatazoa were present but that they were inactive and unhealthy. In each case the condition was associated with a chronic prostatitis and with some pus. In each case treatment of the prostate cleared up the pathology, the virility of the sperm improved, and conception followed. As to retroversion, I do not lay much stress upon it, though in a few cases I have seen conception result promptly simply from lifting the uterus by a Smith or Hodge pessary. I do not think sufficient stress has been laid upon the infantile uterus, which is undoubtedly the result either of congenital error or of acquired disease in childhood and which undoubtedly is associated with some endocrine dysfunction. There is always present a small, anteverted, cochleate organ, the vagina is short, and there are other evidences of developmental arrest. In such cases I am heartily in favor of divulsion, of curettage if indications exist, of the insertion of a Baldwin glass stem pessary into the cervix where it is fixed by silver wire, shot and buttons, and of the wearing of this pessary through two menstrual periods. About 35 per cent of 125 cases treated in this manner resulted in conception. I do not recall in these cases a single instance of infection the cry usually raised when this procedure is suggested. We chose our cases very carefully, we eliminated those in which there was even the slightest suspicion of pelvic infection of any variety in the cervix, parametrium, ovaries and tubes, and we were justified by our results. Finally, the short, stout woman who complains of sterility and in whom no other cause is found is often benefited by the use of thyroid extract if her basal metabolism rate warrants its employment.

Dr. W. E. Levy (closing): I disagree with Dr. Jacobs in the matter of acquired retroversion; those cases are always associated with inflammation or infection, as a result of which the tubes are occluded, and it is the parametrium

and tubes, not the uterus, which are responsible for the condition. I am glad Dr. Miller brought out the point concerning the indiscriminate use of the stem; a valuable adjunct of gynecological treatment is going to fall into disuse unless it is employed with more caution. I recently saw a patient in whom a stem had been used in the face of an endocervicitis; she developed a salpingitis and peritonitis as a result, and now she is incurably sterile. Its use should be safeguarded by the same restrictions as the use of lipiodol. I do not agree with Dr. Miller entirely in the diagnosis of infantilism. It is usually made too rapidly. I saw a patient the other day who had been told she could never conceive without some surgical procedure because she had an infantile uterus; as a matter of routine I used a lipiodol injection, and the radiologist, Dr. Henderson, reported back to me that her uterine cavity was larger than normal and both tubes were patent.

SYPHILIS OF THE LUNG.*

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Less than a quarter of a century ago syphilis was considered an infectious venereal disease, the origin of which was unknown. The final manifestation of syphilis at that time was a condition that we called tertiary syphilis, while tabes dorsalis and paresis were distinct diseases, also of unknown origin. Now all these disease entities form together an uninterrupted sequence of spirochetal symptomatology which divides itself into two general conditions for consideration, one early syphilis and the other late syphilis.

There is no problem confronting the physician which comes up more often than the differential diagnosis of tuberculosis from syphilis. In the respiratory system tuberculosis is so frequently the trouble that other conditions do not come to mind at first sight. Nevertheless, when tuberculosis has not been proved, syphilis is among the most important to be thought of as a complication. Tripier holds that visceral syphilis is the most common manifestation

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and that all the typical clinical and anatomical types are far from recognition even today. The purpose of this paper is to present one of these manifestations.

In considering the possible presence of syphilis in any case of lung disease, very definite limitations in diagnosis must be recognized. Certain facts in the medical history of the case must be pieced together, must be combined with the symptoms, the clinical manifestations, the roentgen-ray and laboratory findings and then, by exclusion most frequently, we arrive at a diagnosis of syphilis of the lung. Even when the diagnosis is not proved until the antileptic treatment gives evidence of improvement in the case. And after all this, there must be the positive isolation or demonstration of the specific organism in the secretions of organs, analogous to the sputum test of pulmonary tuberculosis (Scarlen Cinn).

It is to be emphasized that the first consideration in the diagnosis of any lung disease is to prove or disprove the presence of pulmonary tuberculosis. In many cases this question is soon settled by finding tubercle bacilli in the sputum. Most cases, however, will require more extensive clinical and roentgen-ray examination, that being the roentgen-ray chest examination. When the roentgen-ray films give evidence of disease which is not characteristic of adult pulmonary tuberculosis, the problem of differential diagnosis must be solved. In every case of differential diagnosis the presence of syphilis alone or as a complication must be considered. This also applies in connection with pneumonia, bronchitis, bronchiectasis, abscess, tumor, and pneumoconiosis. In any of them syphilis may be either an etiological factor or a complication. The pathological picture of pneumonia alba of the child is probably more familiar than that of any other form of syphilis of the lung. There is firm consolidation of the lung with frequent accompanying atelectasis or bronchiectasis. The lining epithelium of the

terminal bronchi and even of the partially expanded alveoli is of the endothelial or columnar form which gives a picture resembling fetal lung. On physical examination the findings are of consolidation affecting the greater portion of the lobe, a whole lobe or an entire lung.

Clinically the child is not as ill as would be a patient with a corresponding amount of lobar or broncho-pneumonia. The fever is not high, the child is anemic, weak, appears wasted and chronically ill, but is not toxic. The leukocyte count is low with a relatively high lymphocyte count. A history of syphilis in one or both parents is helpful in the diagnosis. A positive blood Wassermann together with the findings enumerated justifies the diagnosis.

With two such common and widespread diseases as syphilis and tuberculosis it is more than likely that a combination of the two occurs not infrequently in the lungs of the same patient, but accurate recognition of syphilis in the lungs showing tuberculosis is extremely difficult. The symptoms of the two diseases are often identical. In visceral syphilis, especially in the tertiary stage, moderate fever is usually present, emaciation is marked and night sweats are frequent. Pain due to perihepatitis may occur in the lower right chest. The usual adult type of pulmonary tuberculosis is most commonly recognized easily by the clinical and roentgen-ray examinations.

A typical form of pulmonary tuberculosis, such as basal type or caseous pleurisy, both of which show marked hilum lymph node involvement, offer problems of differential diagnosis. If pulmonary tuberculosis occurs in a person who has had a long standing syphilis, or, conversely, if syphilitic infection occurs in a person who has had a long standing pulmonary tuberculosis, there is little, if any change in the usual course of either disease; but if both diseases develop simultaneously, the pulmonary tuberculosis is apt to be extremely active and to pursue a rapid course.

The recognition of both tuberculosis and syphilis in the same lung is at best conjecture and supposition. When a case of pulmonary tuberculosis presents itself with atypical roentgen-ray findings, or presents a positive Wassermann test or other evidence of visceral syphilis, such as aortitis, then lung complications may be strongly suspected. In such cases intensive anti-luetic treatment should be started. If clinical improvement of the patient takes place and clearing of the lung occurs, roentgen-ray will confirm the suspected condition of the lung syphilis.

A result of pathological studies of several investigators shows that there is no uniformity or specificity of the lung changes in this disease. The changes vary from catarrhal condition and bronchitis to massive bronchiectasis or atelectasis, or cavity formation. The fibrosis which is so common is the same as might result from any nonspecific inflammation; hence, there is no uniformity of the physical signs and no characteristic changes when studied on the roentgen-ray chest films.

Syphilis is a general systemic disease, blood borne and capable of attacking any viscus or tissue. Lung syphilis when it occurs, is never primary and is only an incidental location of attack in the widespread ravages of the disease throughout the body. A knowledge of the general course of the disease aids in the recognition of its presence in the body and consequently, in the lungs.

When syphilis is suspected in the lungs, seek first for syphilis in other parts of the body. Seek evidence in the heart or aorta. Then carefully examine the testes. Warthin has shown that next to the aorta and heart the testes are the most frequent sites of syphilitic infection.

Osler is generally quoted as the firmest authority for the statement that pulmonary syphilis is very rare. Osler and Gibson say that in 2500 autopsies performed at the Johns Hopkins Hospital, in only twelve

cases was lung syphilis demonstrated. Downing investigated 3000 autopsies at the Massachusetts General Hospital for lung syphilis with totally negative results. Hazen states that in 6000 cases of syphilis taken from the records of the Copenhagen Hospital there were but two cases of pulmonary lues. It is upon these and other like foundations that the rarity of the disease is established (E. L. Burke, London). Symmers analyzed the results of 4880 post-mortem examinations which were made in ten years at Bellevue Hospital, New York. In only 6.5 per cent was syphilis demonstrated. Warthin on the other hand made 750 autopsies in the rural districts of Ann Arbor in Michigan and found syphilis in 40 per cent of the cases. The results are striking in their wide divergence, the former in a great city among the poorer classes, the latter in a country district among the more well to do class.

The criteria for the diagnosis of syphilis in the dead are the demonstration of the *treponema palidum* and the histological changes that alone are typical of its activities. The work of Graves showed that post-mortem Wassermann tests confirmed the ante-mortem reports in 97 per cent of the cases. The post-mortem Wassermann should not be omitted. Therefore, the presence of syphilis may be inferred and often with some assurance from gross evidence alone, but its absence can only be accepted after negative bacteriologic, histologic and serologic investigation. Its presence can only be definitely proven after a similar series of examinations have yielded positive results.

The essence of the syphilitic reaction, that is to say, the response of the tissues to the activities of the *treponema palidum* is that it is of the nature of granuloma originating in the perivascular lymph spaces as an infiltration of lymphocytes and plasma cells. The chancre, the cutaneous syphilides, the gumma, the fibrosis are all simply different stages and degrees of this reaction. The type depends upon

the organ or the tissue affected, the age of the disease and the time the reaction has been in progress. There is no essential histological difference between the primary and tertiary or any other lesion. The matter of incidence and diagnosis of syphilis in the dead body resolves itself into a decision as to what is the type lesion and how it is to be identified. That is especially so when the disease is in its late or so called latent stages. The latter term is a misnomer. The disease can never be latent. It can only be present or absent. If it is present it is invariably active, although it may not be at the moment giving rise to well defined clinical signs. Whenever syphilis is present, whenever a positive result is obtained in a Wassermann test, active positive processes are taking place in some organ or tissue of the body. Such a condition is most properly termed "endosyphilis," which means syphilis without any clinical signs. In such cases the presence of the disease is indicated by a distinct histological picture in the organ affected.

Warthin showed, as a result of his investigation, that the gumma is not the typical lesion of late or endosyphilis. The viscera are all involved in all such cases and the type-lesion consists, not of gummatous, but of specific inflammatory processes. This condition eventually proceeds to fibrosis, and perhaps, further. The typical inflammatory reaction is mild in character, but is of profound pathological importance because of its steady progressive nature.

In his 750 autopsies, of which 40 per cent were found to be syphilitic, Warthin adopted the histological and modern method of investigation. His standard of diagnosis was most rigid; indeed, it is the only one capable of carrying positive or negative conviction. It is clear, therefore, that any statement relative to the occurrence of syphilis of the lungs—or, indeed, of any other organ—is, unless it is based upon such histological investigations of no

value whatever. The opinions that have been quoted as supporting the assertion of the rarity of pulmonary lues are not all based upon the treponema conception of the pathology of the disease. They are founded upon macroscopic appearances; their criterion is the gumma, and upon these grounds, they are obsolete.

Recent post-mortem examinations show, when modern criteria of diagnosis are adopted, that the general incidence of syphilis is much higher than was at one time believed or suspected. It would, therefore, appear that the low incidence of pulmonary syphilis is not real, but only apparent. There is every reason to believe that the lungs are no more immune to the mild general infection of syphilis than are the other organs. One point does emerge very clearly, and that is the essential lesions of syphilis are the same in the lungs as they are elsewhere; and, from the clinical aspect, the lungs of every syphilitic must be regarded as "damaged goods."

In considering the relationship of pathological findings in the dead to the incidence and the diagnosis of syphilis in the living, the first point of practical importance to be noted is the close clinical resemblance that exists between lung tuberculosis and lung syphilis. The differential diagnosis between pulmonary syphilis and pulmonary tuberculosis is not really a very difficult matter. The approximate truth may be expressed aphoristically by saying that every case of pulmonary tuberculosis which has a persistently negative sputum, and which remains in a stationary condition, is pulmonary syphilis.

Accurately to diagnose pulmonary syphilis in the living entails a careful consideration of the history, the physical signs in the chest, the roentgen-ray appearances, the sputum, the Wassermann report and the effect of antisiphilitic treatment.

I will present a few cases which are not at all unusual and which go to show how they may be overlooked, even by the most

careful internist. One is a case of Louria, Philadelphia; the others are cases which I have had in general practice in the last few years.

CASE HISTORIES

I. J. M., male, aged 40, married, was first seen June, 1917, giving a history of protracted cough, moderate expectoration, occasional small hemoptysis, afternoon rise of temperature, night sweats, progressive loss of weight and strength. Venereal infection denied by name and symptoms. Examination otherwise negative, no adenopathy, no scar of an initial luetic lesion, blood Wassermann reaction negative.

The patient was sent to Lake Saranac. After one month of careful observation and investigation there, the patient was returned home with final clinical and roentgen-ray diagnosis of carcinoma of the lung, based upon the extent of the lesion, the marked, rapid emaciation, absence of tubercle bacilli in oft repeated sputum examinations and the non-response clinically to the usual regime.

Five months later the patient again appeared, having noted multiple painful lumps on the scalp. These were shown to be definite osseous tumor-factions. Incision of them yielded broken down, necrotic grumous detritus which was reported as granuloma. The character of the bony involvement suggested syphilis, which was confirmed by histologic examination. Blood Wassermann now four-plus. A six weeks' course of antisyphilitic therapy was instituted, with uneventful recovery.

Roentgen-ray examination in 1922 showed no residuary pulmonary infiltration. Blood Wassermann remaining positive, two more courses of treatment were given; Wassermann became negative and remained so.

March, 1924, patient developed a very severe broncho-pneumonia with a recurrence of symptoms of 1917, plus the reappearance of a positive Wassermann with further antiluetic therapy; uneventful recovery.

The case is of interest for the reason that it presents several of the types of pulmonary syphilis as it has been categorically classified; first, the pneumonic form mistaken for pulmonary tuberculosis; second, the form mistaken for carcinoma of the lung; third, the gummatous form with subsequent necrosis and cavity formation.

II. F. T., female, was a patient that I had been treating for the last fifteen years for pleurisy. Every winter she would have one or more attacks of acute bronchitis with pleurisy which would necessitate her staying on the bed for sev-

eral days. The diagnosis at that time was a strumous case with most likely a tuberculosis. Sputum examination was negative. In August, 1927, had a Wassermann made which showed four-plus positive. Active antisyphilitic treatment was given for three months and she had gained 18 pounds and has not had any trouble for the last two winters.

III. G. V., colored, female was seen October 8, 1926. Complaint, has had fever and cough for about eight months, following influenza, getting worse, and losing weight. Temperature 103°, pulse 140, respiration 32, extremely emaciated. Physical examination showed a cavity in upper lobe of right lung with moist rales, fine and coarse, all over both lungs. A diagnosis of pulmonary tuberculosis was made, which was afterwards confirmed by a positive sputum. Patient was kept in bed for about fifteen months, at which time she was free of fever, with a pulse of 90, and a practically dry lung. She was allowed to be up and about some for a few months, when she developed a cough again, and examination showed her to have a toxic goiter with a distinct exophthalmia. She was put back to bed and a Wassermann was made which showed four-plus positive. She was then put on active antisyphilitic treatment and is somewhat improved, though far from being well.

IV. F. W., colored, female, was seen May 24th 1927. Complaint, asthma of about four years standing. Examination showed an emaciated woman with a distressed look, struggling for breath. Temperature normal pulse 100 with coarse rales and wheezing over both lungs. Percussion gave a high pitched sound as if an emphysema was present. Sputum negative for tubercle bacilli. Wassermann four-plus positive. Active antisyphilitic treatment was given for six weeks. The symptoms were improved after the first week's treatment. She has showed no signs of trouble since, and is now at work.

V. G. McA., colored, male, aged 57, was seen June 13, 1928. Complaint, asthma, that kept him from being able to lie down, and giving him most trouble at night, with a history of having had "consumption" for twenty years, with several hemorrhages in the meantime. Examination showed a thin man with difficulty in breathing. Temperature normal, pulse 90, with dullness over upper part of right lung, with coarse rales over both lungs. Sputum negative for tubercle bacilli. Wassermann four-plus positive. Diagnosis, pulmonary syphilis, probably of twenty years' standing. Antisyphilitic treatment was given with some improvement, but not kept up long after he began to improve. Have seen him several times

since and as soon as treatment is given improvement follows and as soon as improvement occurs he stops his treatment.

VI. V. J., a colored female, was seen September 4, 1928. Complaint, the diagnosis of pulmonary tuberculosis had been made by competent man in a nearby city of a neighboring state, with a history of having been unable to work for two years and of being on the bed for eight months. Examination showed a thin woman with a pulse of 80, temperature $100\frac{2}{5}^{\circ}$, with fine moist rales over most of the lungs. The patient did not look sick, not as sick as one would expect to find in a case of pulmonary tuberculosis of that long standing, as severe as this seemed to have been. Sputum negative. No diagnosis made. Wassermann test showed a four-plus positive reaction. Antisyphilitic treatment was given and she began to improve, being able to pick cotton in November. Treatment was continued until March this year, with continued improvement and with patient able to do any kind of work and feeling fine.

CONCLUSIONS

First. That syphilis of the lung is not as rare as it is even now commonly thought to be.

Second. That the reason for the prevailing opinion of its rarity is the former lack of scientific means of determining syphilis even in post-mortem examinations.

Third. That lung cases which show a repeated negative sputum and which remain in a stationary condition for a long period should be considered as syphilitic.

Fourth. That even with the advanced laboratory and roentgen-ray methods of aid in diagnosis, the therapeutic test should be made in doubtful cases.

DISCUSSION

Dr. G. W. F. Rembert (Jackson): There are three outstanding features in that paper. First, it was well written; second, well presented; and third, it brings the most remarkable series of six cases (incidentally, I had the pleasure of previously reading this paper) in one man's practice, of syphilis of the lung.

Four weeks ago in Boston I had the opportunity to listen to Dr. Rizer of Minneapolis. He re-

ported one case of a woman who had had syphilis of the lung probably for a period of twenty years. The outstanding thing in that case was the fact that no one had suspected that she had syphilis of the lung in spite of the fact that practically all of that time she was having pain. She was strapped and given other forms of relief.

Advisability of using Wassermann as a test: The same man brought up statistics showing the incidence of syphilis of the lung in which he quoted (and I shall refer to this just a second) that in Johns Hopkins general autopsies, there were four cases in 2800, that Baycott reported two cases in 6,000, and T. Larsen Brown of Saranac Lake said that in twenty-five years of general practice he had encountered only one case of syphilis of the lung. In the Cincinnati Tuberculosis Hospital, there were only two cases seen in 791 patients. Against that there is a remarkable finding of Carrera working with Warthin in Ann Arbor of twelve cases in 152 autopsies of syphilitics, and Peterson working with him shows eleven cases in eighty-eight autopsies, showing an incidence of $12\frac{1}{2}$ per cent.

The question comes up probably, "Why would the Warthin group find so many cases of syphilis of the lung when no one else had found them?"

That might be answered by saying that there is no man today in the country anywhere who is probably looking for syphilis as much as Warthin. The next thing is that Warthin has been able to demonstrate the spirochete in tissues where it has never been found by others. His incidence of spirochetes is perfectly tremendous. Those men who are working there with him in the same field believe that it is due to some particular way Warthin has of using his silver stain.

You are struck with the fact that the two cases which the doctor is reporting are two whites and four negroes, and you are struck also that every one of his cases had a four-plus Wassermann.

I think the deductions are rather obvious. First, the negroes are more likely to have it, and second, the responsibility of doing the examination should include a Wassermann test as a routine feature.

As to the diagnosis, I think it is agreeable that it is a very difficult diagnosis to make. What Dr. Trudeau said about tuberculosis (the only regular thing about tuberculosis is the regularity of its course) might also be said of syphilis of the lung.

Clinically, it suggests tuberculosis until the tuberculosis is disproved. From an roentgen-ray standpoint there certainly is nothing typical. When it comes back to the question of making your diagnosis, it is going to be first, the negativity of tuberculosis; second, the positive history and the Wassermann test; and third, the therapeutic response.

The fact that the doctor brings to you that the incidence of syphilis of the lung is so much greater than generally thought (which he has proven) is certainly worthy of all of us being more careful in the future, and it is quite possible that we have all overlooked cases that should have been properly diagnosed.

Dr. Cockerham (closing): The point I want to bring out is this: I have been seeing just as many cases of syphilis of the lungs in the twenty-four years that I have been practicing medicine as I have seen in the last two or three years and I didn't recognize it. I didn't recognize it for two reasons: The main reason was that I wasn't making routine Wassermann examinations and I overlooked it. I diagnosed these cases as struma cases and various other diagnoses.

I can't say definitely now that those cases were syphilis of the lung, except for the fact that their lung condition improved when placed on antisiphilitic treatment.

The thing I want to bring to you today is the fact that I think we are overlooking syphilis of the lung, because we think it is tuberculosis, and because we are not having our laboratory check up behind us.

I also think the reason for our overlooking these conditions is the fact that it is generally considered a rare disease. There is no question but that Warthin is doing more work in syphilis than any other man before us today, and his work seems to be of a more scientific type than we have been able to develop heretofore. Therefore, I think that is the reason we are getting our eyes open as to this condition. I think it will not be very long before we will be finding more syphilis of the lung and not considering it the rare disease that it has been supposed to be.

THE INCIDENCE OF INFECTION WITH ENDAMEBA HISTOLYTICA IN LOUISIANA AS DETERMINED BY COMPARATIVE MICROSCOPIC AND CULTURAL METHODS.*

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and

CARLO J. TRIPOLI, M. D.,

NEW ORLEANS.

The incidence of infection with *endameba histolytica* as determined by any manner of survey would necessarily represent not only those individuals who are actively parasitized and are presenting definite evidence of amebic disease, but also a larger number of so-called "carriers" of the infection who are more or less free from symptoms of the disease and whose detection in the past has been attended with some degree of uncertainty.

Amebic dysentery has not decreased in the same proportion as other enteric diseases with the advent of modern sanitary handling of water and milk. This is apparently due to the fact that the greater number of new infections originate in directly contaminated food from a clinically unrecognizable source of infection—the carrier. Numerous investigators have shown that many persons harbor an infection of the pathogenic type of ameba, and produce infective encysted parasites in countless numbers, and yet only in extremely rare instances has any attempt ever been made to find and eradicate the parasites that may be present in food handlers by even a cursory examination.

The carrier problem in amebic infection is also of considerable importance to the carrier himself. It is gradually becoming generally recognized that the *endameba histolytica* is almost an obligate tissue parasite and that for reproduction to continue

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in even the symptomless carrier the reproduction must occur largely in superficial ulcers of the intestinal mucosa. While some few carriers present no demonstrable symptomatology, the majority of them do present some abnormality of intestinal sensation or function. Frequently the quiescent carrier state is merely the interval of time between acute exacerbations of dysentery. Again, the threat of liver abscess is constantly present in one infected with this parasite, for active dysentery is not a necessary pre-requisite to this complication, by any means.

Investigation has shown that while amebic dysentery is more frequently found in the warmer countries, the infection is endemic throughout the world. The technical difficulties encountered in making tedious microscopic examinations of large groups of people have been almost insurmountable. Consequently, surveys of the general population for carrier incidence are rather few in number. The following, however, may be taken as fairly representative of conditions prevailing in those countries where such work has been undertaken:

England (Matthews & Smith in 1919)	
450 adults	1.5 (1)
Germany (Bach in 1924) 435 adults	
and children	6.0 (1)
France (Lenoir & Deschiene in 1924)	
1000 adults (males)	5.0 (1)
United States (Kofoid & Swezy, 1920)	
576 adults (home troops).....	4.3 (1)
United States (Craig & St. John, 1927)	
71 adults (students).....	15.4 (2)
United States (Williamson, Kaplan &	
Geiger in 1929) 1149 adults (Chicago)	2.3 (3)
China (Kessel & Svenson in 1924) 221	
foreigners	10.0 (1)
816 natives	14.1 (1)
Brazil (Young in 1922) 249 children....	22.5 (1)
Egypt (Wenyon & O'Connor in 1917)	
524 natives	13.7 (1)
Java (Brieg in 1920) 150 natives.....	23.0 (1)
Malay Peninsula (Jepps in 1923) 1034	
natives	14.5 (1)

While presenting no statistical data, P. Brown³ reports the finding of 436 infec-

tions in the Mayo Clinic during the past five years in patients most of whom came from the northwestern part of the United States.

With the advent of more rapid methods of direct microscopic examination and precise methods of culturing of stools for the pathogenic ameba we have completed the examination of a number of persons in this locality and it has seemed to us of importance to present our findings in this investigation.

The stools were examined directly following passage if there was any evidence of a diarrheal condition present. Normal stools were examined by the centrifuge concentration method developed by one of us, Johns⁴. Cultures were made in both plain and acriflavine charged media as modified from the original formula of Boeck and Drbohlav by Dobell and Laidlaw⁵ and prepared according to the detailed directions published by one of us, Tripoli⁶ in 1928. While only one specimen of feces was examined as a rule, we have proven to our entire satisfaction that with appropriate methods the greater majority of infections may be determined with a fair degree of accuracy in untreated patients.

The two methods of search have coincided almost identically in the results obtained, so that we would like to emphasize a difference of opinion from both the published findings of Craig and St. John² who report 15.49 per cent of infections determined by cultures against only 8.45 per cent as found in smears, and of Thomas B. Magath⁷ who found almost twice as many stools infected by direct microscopy as he obtained from cultures in some 800 examinations.

In our series of 544 examinations, 36, or 7.44 per cent, were found to be infected with *Endameba histolytica*.

Of these individuals there were three separate groups, as follows:

Routine private patients, 130; 9 of whom were infected, or 6.92 per cent.

Medical students, 180; 15 of whom were infected, or 8.33 per cent.

Patients in Charity Hospital, 234; 17 of whom were infected, or 7.22 per cent.

Of the infected persons, 6, or 1 per cent, of the total, presented definite symptoms of dysentery with vegetative forms of the parasites present. Thirty-five, or 6.43 per cent, were cyst carriers, many of whom presented evidences referable to the infection but who were free from active dysentery at the time of examination.

From the close similarity of the rates of infection shown by these three groups of individuals, it is apparent that this probably represents a fair index of the population of this locality as a whole.

SUMMARY

Seven and forty-four one-hundredths per cent of a series of 544 persons residing in Louisiana were found infected with *Endameba histolytica* by a combined microscopic and cultural examination.

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DISCUSSION

Dr. S. K. Simon (New Orleans, La.): I should just like to arise a moment to say a word with regard to Dr. Johns' work in this field.

Those of us who have worked in the past with the problem of amebiasis can best appreciate the contributions Dr. Johns has been making in the last few years. He did not mention, except incidentally, the very record-breaking work he has done in regard to the cultivation of the *endameba histolytica*. Those of you who haven't become familiar with that particular work, I would suggest, just as a matter of pure scientific interest if for nothing else, get in touch with Dr.

Johns and let him show you his beautiful cultures of the *Endameba histolytica*.

The practical point of the culture of the *endameba* is that our diagnosis of this disease will be placed upon a very much clearer ground. In the past, we have found in some cases that the percentage of failure in finding the *endameba* either in the vegetative or encysted form, is so great that it would require at least five or six examinations to absolutely exclude the possibility of infection.

With this method that Dr. Johns and others have devised of culturing the *endameba*, it will be a very simple, practical matter in the future in our laboratories to pick out each stool that is infected with *Endameba histolytica*, and those that are not.

The figures Dr. Johns has worked out, I am sure have been worked out on the basis of cultures. That is the method of the future, not depending on the possible finding of *Endameba histolytica* infection of the stool. The use of the culture method, I think, will prove to be pretty nearly 100 per cent, whereas the other old-time method is certainly not in that class.

I couldn't resist the opportunity, since nobody else attempted to discuss this paper, to add my word of appreciation of Dr. Johns' great work in this field.

Dr. C. J. Tripoli (New Orleans, La.): I wish to call attention to the fact that Dr. Johns mentioned, namely, that the incidence of amebiasis has not diminished with the advent of modern sanitary conditions and that the infection is transmitted principally by carriers of *endameba histolytica*.

Here, in Louisiana, we have a requisite that all food handlers should have a medical certificate before they will be allowed to dispense various food products which are consumed by us; but no attempt as yet has been made to examine the stools of these individuals for intestinal parasites. The one in which we are most interested now is the *Endameba histolytica*. That is quite important.

Kaplan, Williamson and Geiger of Chicago recently reported a small epidemic in one of the Chicago hotels where two patients had embolic abscess, one almost terminating fatally. Another had an undetermined temperature, and symptoms which were finally diagnosed as due to a liver abscess, caused, probably, by *endameba histolytica*. There were also four or five cases of dysentery in this hotel.

It was apparent to the doctors in charge that there must be some carrier somewhere. Geiger, a noted epidemiologist, was called in and with the co-operation of the hotel managers an examination of the stools of the kitchen help was made. Two of the girls down in the pantry were found to be carriers of cysts. One of the men who was handling the food before being received by the chef gave a history of dysentery quite a long time previously. An examination of his stool revealed numerous cysts, and they were all proven to be of the histolytica variety.

The peculiar thing about this man was that he was from Louisiana, working in this hotel as one of the food handlers. The epidemic in this small hotel was traced to these three individuals working down in the pantry. Treatment of these individuals, with the treatment of other individuals infected with histolytica, resulted in the eradication of the infection in that part of Chicago.

In conclusion, I should like to make a plea, that our State Board of Health require not only a physical examination before giving a certificate for handling food but also a stool examination for intestinal parasites as well.

THE EARLY DIAGNOSIS OF INTESTINAL OBSTRUCTION*

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Because of its high death rate and rather frequent occurrence, intestinal obstruction stands as a surgical problem that needs to be solved. Statistics as gathered from the literature vary in their estimate as to the death rate in this condition. In the January issue of the *Annals of Surgery*, quoted by Dr. C. Jeff Miller, in two hundred and forty cases as observed by him in the Charity Hospital and Touro Infirmary, the mortality rate was 60.9 per cent. In my own cases the rate has been 73 per cent. In the fact of these figures the rate of 39 to 45 per cent as given in the standard text books can be discounted. My estimate of the mortality rate would be about 68 per cent.

We are all aware that the earlier the diagnosis the lower the mortality rate. As

we are prone to criticize and condemn in these cases, when the diagnosis has been tardy and the patient has been given purgatives; so should we stop and reflect, a very logical reason can be found for the misunderstanding. In looking over the literature we find sufficient information to serve as a nucleus for the arranging of this subject in a comprehensive manner.

We need a classification that has a direct bearing upon the pathological changes, and secondly, an explanation of the symptoms as they occur. With a few exceptions, intestinal obstruction is an insidious disease, slow in its manifestations and deadly in its outcome.

DEFINITION.

I will endeavor to define and classify in their pathological sequences the conditions found in an acute progressive intestinal obstruction. Definition: Intestinal obstruction may be defined as an impediment to the onward passage of intestinal contents produced from any cause whatsoever, either intrinsic or extrinsic. This condition may be further divided into an acute or chronic, or complete and incomplete obstruction.

CLASSIFICATIONS.

Simple obstruction or constriction would include all cases of intestinal obstruction in which there is no interference with intestinal circulation.

Strangulation indicates simple obstruction in which there is interference with intestinal circulation. I do not use the term "thrombosis" as suggested by Hertzler because of the confusion that might exist in the description of the cases of thrombosis of the large mesenteric vessels.

Ileus is used to designate an obstruction due to paralytic conditions of the bowel.

Foreign bodies in which the obstruction is caused by foreign body in the intestinal canal.

Thrombosis of the large mesentary vessels.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

The etiology is difficult in a paper of this kind, and as the time is very limited, I will only mention a few of the etiological causes. Bands of adhesions, stricture of the bowel, may follow ulceration, tuberculosis and syphilis.

Foreign bodies, such as gall stone, intestinal concretion and parasites, are causes of obstruction. Intussusception and strangulated hernias are other causes. Obstruction due to ileus may be secondary to toxic conditions affecting the neuromuscular apparatus, but are usually secondary to some surgical procedures. Embolism and thrombosis of the mesentery vessels may occasion an ileus of the affected portion and thus produce obstruction. Cancer and new growths as well as extrinsic tumor masses are a rather frequent cause of intestinal obstruction.

SYMPTOMATOLOGY.

Inasmuch as all cases of chronic obstruction may become suddenly acute, it will be well to consider primarily symptoms of acute obstruction. The symptoms begin very abruptly. Intense pain, colicky in character, is a chief symptom. As a rule the pain is very intense, reaching a maximum in a few seconds and gradually subsiding. At the same time, in most of these cases, visible peristaltic waves can be observed. To analyze these symptoms, the reason for the visible peristalsis and the intermittent type of pain can be readily explained. Most of these obstructions will allow the gases to pass through; as a peristaltic wave brings the intestinal contents toward the obstruction it causes a ballooning of the gut which can be readily observed. The peristaltic wave can be followed to the obstruction. When it reaches this point the intensity of the pain reaches its maximum. As the gases pass through the obstruction the patient becomes relieved until the next wave, in which there is a recurrence of the above symptoms. Vomiting is always present and is soon feculent. During the interval the patient is comfortable, the temperature may be

normal, the pulse regular and normal, the patient having all the appearance of an old-fashioned belly ache. It is at this time the doctor is called. We find no rigidity, no distention and the patient does not seem acutely ill. The vomiting is readily explained by an up-set stomach, and the pain, as a wind colic.

Enemas used at this particular time have a very important bearing upon the diagnosis. Usually following the first enema a normal bowel evacuation takes place, but following repeated enemas the fluid usually returns clear without any discoloration or fecal particles. This properly interpreted is a very significant point in the diagnosis of intestinal obstruction. It is important to note that the abdomen is usually not sensitive to pressure in the cases of simple intestinal obstruction.

As this condition progresses we have an interference with intestinal circulation, the condition changes from a simple obstruction to one of a strangulation. Now let's see what happens, the vomiting becomes stercoraceous, is incessant, the patient regurgitating mouthfuls of fluid and a continuous spit, spit, spit, which is so frequent in this condition. The abdomen becomes distended, rigid and painful to pressure. The pulse is accelerated, the skin is cold and clammy, the temperature is elevated and in the late cases may be as high as 106° F. These patients are very toxic, this toxicity being due to the presence of a loop or a portion of dead gut. This has been proven by a recent experiment at Rochester. So as the condition progresses we have all the appearances of an acute surgical abdomen and a very sick patient.

A good many cases of obstruction begin, not as a simple obstruction, but as a strangulation such as a volvulus, strangulated hernia or an intussusception. These cases are obviously diagnosed because of the acute reaction of the abdomen, vomiting, pain, peristaltic waves, increased

pulse rate, elevated temperature, cold clammy skin and increased leucocyte count. There is no reason for mistake or error to be made in the diagnosis of these conditions. Diagnosed early a large percentage of these cases will recover. It is insidious, simple obstruction in which a diagnosis is tardy. Strict attention as to detail and a reasonable idea of what is taking place in an abdomen will lead one to be very suspicious of an obstruction.

ILEUS.

These cases usually follow operation and are readily recognized, having all the symptoms of an acute strangulation with the exception of the pain. Also a more general distension of the abdomen and the symptoms of a general peritonitis.

FOREIGN BODIES.

With an unusual experience of eight cases of foreign bodies in the intestinal canal in which the diagnosis was made before operation in three of them I might say this condition has a clinical picture which is as clear-cut as is the gall stone or renal colic. These symptoms begin the same as a simple obstruction, colicky pain, vomiting, periods of relief, etc. There is this difference which I have observed in the cases of simple obstruction, the maximum point of pain is always in the same place, but in the cases of foreign bodies in the intestinal canal the maximum point of pain is apt to be found in a different part of the abdomen on different examinations. I recall one case that resembled very much a case of renal colic. The pain was relieved following hypodermic, no blood cells were found in the urine, the case was dismissed as one of uretral kink, a week later the pain returned located near the umbilicus. Diagnosis of intestinal obstruction was made and the patient operated. Two large enteroliths were removed from the ileum. While upon the subject of foreign bodies I might say that cases observed by myself and confreres in which they have all been operated early, we have not had a single recovery.

THROMBOSIS OF THE MESENTERIC VESSELS.

Cases of this type reported, at no single instant has anyone stated whether the thrombus was in the vein or artery. These cases are usually taken suddenly with severe pain resembling cases of acute pancreatitis or perforating gastric ulcers. The abdomen becomes extremely rigid, the pain is unbearable, leukocyte count is extremely high, the diagnosis can only be made by exploratory incision. I do not know why this condition is included in the category of intestinal obstruction. I mention this because of the fact that in all standard text books it is placed in this category.

CONCLUSIONS.

Having gone into the subject very carefully, we can readily see why the cases of simple obstruction are overlooked. I have observed these cases for as long as seventy-two hours without noticing any serious abdominal reaction. These cases are usually overlooked and are not diagnosed until the abdomen becomes an acute surgical condition. As long as there is no interference with the circulation and the gut is healthy you would not expect the patient to be toxic because the toxic substances in these conditions are caused by a portion of devitalized intestines. There is no reason to overlook the acute strangulations for as soon as the circulation is interfered with a localized peritonitis sets up and you have the reaction which causes the symptoms of an acute abdomen.

If I have done no more than bring this subject to your attention and to cause a lively discussion, and in this manner have added my small portion to the lowering of the high mortality rate in this condition, then I shall consider my mission a success.

DISCUSSION.

Dr. J. Q. Graves: In no surgical condition is it more imperative that an early diagnosis be made than in acute intestinal obstruction, if conservation of human life is to be expected, as the mortality rises rapidly hourly.

The differential diagnosis between intestinal obstruction and other acute intra-abdominal con-

ditions is not always easily made, for in many instances we find no outstanding symptoms which would lead us to an early diagnosis. You may take for illustration two parallel cases of intra-abdominal conditions, in the old and in the young.

In young children where intussusception follows an acute enteritis, or after taking a strong purgative, and in the intestinal obstruction of old people who have suffered for a number of years with obstinate chronic constipation, early symptoms which would be suggestive of obstruction are misleading because of the previous history, as well as the absence of many of the physical findings.

The mortality will be high in the child because the acute enteritis has caused a depletion, while in the older people the low resistance incident to the age makes their condition also hazardous. It is important when acute intestinal obstruction is suspected that early and frequent blood counts should be made. You will find a steady climbing in both the total and differential, and in many instances there is an increase in the differential over the normal proportion of the total. Blood chemistry is exceedingly important and helpful in these cases. We find a definite lowering of the chlorides always present after a few hours duration.

Dr. P. B. Salatch: For some time we have been using the roentgen-ray at Hotel Dieu in the diagnosis of obscure intestinal obstruction, not associated with some acute abdominal pathology as appendicitis or duodenal ulcer. Blood chemistry gives us some information, but the roentgen-ray gives it more speedily and more clearly, and I hope that its use in this connection will soon become more general.

Dr. J. A. Danna: This subject has had a large volume of material written upon it within the last five years, and most of it could be omitted if the title of the essayist's paper were taken seriously, the early diagnosis of the condition. The ability to make the early diagnosis, however, is not as simple as it sounds. The surgeon does not get the patient early because the man who sees him first delays in making his diagnosis. He cannot make a positive one immediately. Those of you who know me know that I am inclined to be conservative, that I am not the kind to enter a home, examine a patient, call the ambulance, and operate when he reaches the hospital. But I want to say a word of praise in favor of the men who do. That sort of surgeon never has any very sick patients, never loses any, from intestinal obstruction. He will cure many a patient I will not because I am inclined to wait for a more positive diagnosis, because I do not care to operate on suspicion. In this condition, however, I am apt to be entirely wrong. You cannot do very much harm by opening an abdomen that does not require

surgery and if you develop the habit of going in promptly, you will not have many deaths from intestinal obstruction.

Dr. Alton Ochsner: I disagree with the use of the term ileus to imply that pain does not exist with it. It is derived from the Greek and it means originally a severe, colicky pain; for that reason it can be used in connection with any type of obstruction, mechanical as well as adynamic. As to diagnosis, that is the most important part of the treatment, and the only way to be certain of recognizing the condition is to bear it always in mind. Any individual complaining of a colicky abdominal pain is a potential case of ileus. Two diagnostic points are of value, one of which is auscultation of the abdomen. It reveals in the early stages of the disease a very noisy abdomen with whirring sounds, which are caused by the more or less ineffectual increase in peristalsis. Later, as the condition progresses from the original simple mechanical type, tinkling sounds are heard, due to the increase in the fluid content. Last of all we have the "ominously silent" abdomen. Dr. Salatch's point as to the value of roentgen-ray examination is well taken, and these slides which I exhibit will make it clear. In the first the patient has been examined lying down, unfortunately the usual way these pictures are taken, and while we note gas in the intestinal tract, this can occur in simple constipation as well as in intestinal obstruction, and so it is not definitely diagnostic. But in the plate taken with the patient in the upright position, the definite fluid levels combined with the distribution of the gas are entirely pathognomonic of ileus. With a picture like this you may be sure you are dealing with intestinal obstruction. The information can be obtained early and it is very valuable. We have used the method repeatedly on our service at Charity and it has saved us many disasters.

Dr. Urban Maes: This is a subject which cannot be passed over, which is worthy of being discussed in detail. I want to emphasize a point already made by Dr. Danna. Acute intestinal obstruction falls into three groups, the mechanical, of which the essayist has cited eight cases; the vascular, headed by patients with mesenteric thrombosis, and the perforative, which are rather typical and are illustrated by the perforation of a peptic ulcer. Practically none of these are the result of what Deavel calls "virgin pathology." Therefore, the important thing to do is to consider not only what has just happened but also what has gone before, and then to adopt Dr. Danna's suggestion of immediate exploration. C. H. Mayo once said, and I think he got the thought from Dr. Finney, that no patient had ever died as the result of a properly performed exploration, though many patients had died for the want of it. If the condition is in the least suspicious of intes-

tinal obstruction, this is the one time in surgery when operation on suspicion is justified. Another thing to be remembered is that the surgeon of experience never attempts too much. It is not his aim to finish the job. He is satisfied to relieve the immediate condition and to leave the fine points of the procedure for some subsequent time. The relief of intestinal obstruction is not the place for the brilliant surgeon to demonstrate his technique. The thing to do is to find the pathology, relieve the obstruction, and then treat the patient. As has been pointed out, after operation is the time to resort to accessory measures, to employ blood chemistry, etc. I want in this connection to pay my respects to Dr. Ochsner, who has devised a method of overcoming paralysis of the bowel, which, while still in the experimental stage, will undoubtedly become a very valuable adjunct a little later. These patients, as you know, die from toxemia, which is caused by toxins produced within the lumen of the bowels. We have learned very largely to disregard the peritoneal reaction. I have demonstrated to my own satisfaction and to that of my staff that a peritoneal cavity full of pus does not necessarily mean death if we take proper care of the pathology behind the purulent peritonitis; in that case, the patient will get well, even without drainage of the cavity. The roentgen-ray is a valuable method of diagnosis when the bowel is still active, but it is naturally of no help when the bowel is dead.

Dr. D. I. Hirsch (closing): I am glad that my attention was called to the use of the roentgen-ray as a diagnostic aid in intestinal obstruction. Dr. Case has pointed out its value in this connection, and I simply neglected to mention it. I do not think the laboratory is of very much help in the early diagnosis, either in regard to blood counts or to blood chemistry. The typical cases are those seen early, with severe, intermittent pain, such as a child would have who had swallowed too large a bolus of green apple. That is the typical picture of obstruction, but the apple is gotten rid of more simply than the true obstruction. When a surgeon sees a patient complaining of colicky pain in the abdomen, he will not make a mistake if he operates if the pain persists for 24 hours, even if the abdomen is soft and the temperature not elevated. I too, pay my respects to Dr. Ochsner's use of splanchnic anesthesia in cases of ileus. Dr. Graves has used it several times and I have used spinal in one or two cases with very fair results.

EARLY SYMPTOMS AND TREATMENT OF CRE TINISM.*

G. Y. GILLESPIE, JR., M. D.,

GREENWOOD, MISS.

It is my pleasure to have been asked to present to you a consideration of the early symptoms and treatment of cretinism. Obviously the problem is an exceedingly difficult one, for it is impossible to visualize completely from without the complicated glandular mechanism that governs and controls body metabolism. It has been said that "Life is the expression of continuous cellular activity, but in addition to those basic processes of the metabolic change which represent living, there are certain other activities which are special to the years." The most dominant and outstanding features of the first years of life are growth and development.

ETIOLOGY.

Cretinism represent a symptom complex marked by arrested or abnormal physical and mental development. It depends upon the absence of thyroid secretion, in whole or in part, and the various degrees of the cretinoid state hinge upon the thyroid function. According to the generally used classification it is divided into two varieties: endemic, which is more common to certain mountainous regions, especially the Alps and Himalayas, and sporadic, which occurs in any and all parts of the world. This classification, based on external factors, as geographic distribution, is theoretically not scientific, but there is justification for a limited use of this particular division in that the sporadic variety usually presents the clinical picture which might be expected from simple loss or diminution of thyroid secretion in the individual himself, whereas, the endemic form appears to be due to a multiplicity of factors, is associated with general degenerative processes, with greater variety of symptoms and less adherence to type. It is only in the spora-

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dic cases that we can expect to get definite beneficial results through treatment of the individual, consequently the discussion will be confined to this variety.

Most cases of sporadic cretinism may be considered congenital. A state of irritability or instability of the thyroid gland in the mother may be transmitted to her children and may assume the form either of abnormal increase or diminution of thyroid activity. Myxoedema may develop in a mother during pregnancy and present only the mildest symptoms, but produce definite hypo-thyroid syndromes in her offsprings.

Sajou states: "The most important hereditary causes which entail defective development, morphological and secretory, are syphilis, alcoholism and gouty diathesis. Even far back in the parental lines on either side these transmit their influence through the intermediary of the ductless glands, especially the thyroid, adrenals and pituitary, which jointly, from proven studies in endocrinology, carry on oxidation and metabolism and thus constitute so to speak the tripod of the vital process."

The acquired form of sporadic cretinism is due to thyroid deficiency usually arising from acute illness from some infectious disease. These cases may have presented perfectly normal development with no hypo-thyroid symptoms until the illness.

In the division of sporadic cretinism into congenital and acquired forms, there has been sufficient evidence produced to enable us to distinguish between those cases in which the thyroid is functionless at birth and those in which the function is lost at a later period.

SYMPTOMS.

In regard to symptoms of sporadic cretinism or hypo-function of the thyroid gland in infants and children, I would like to call your attention to three common misapprehensions. First, that it presents strange, rare or peculiar syndromes. Second, that when it is present the victim

is marked by some unusual and striking physical peculiarity. And finally, that after a diagnosis is made nothing of definite gain can be accomplished. In regard to these misapprehensions, consider early symptoms of hypo-thyroidism in the newborn. The first point of inquiry in the suspected infant should be the size and weight at birth. Every baby over ten pounds in weight or of an unusual size at birth is out of the range of normal and should be suspected of having been influenced by pre-natal deficiency of the thyroid gland. Instead of the fourteen-pound baby being the pride and joy of the obstetrician and the father, Englebach states it should be one in which thyroid treatment should be given from the first few weeks of life, and thereby probably help to prevent many of the early so-called gastro-intestinal upsets and the peculiar nocturnal insomnia to which these infants are subject. Englebach in his studies has found that the normal infant at birth has the osseous nuclei of the distal epiphysis of the femur, the proximal epiphysis of the tibia and two tarsal bones, astragalus and calcaneus, a third tarsal center, the cuboid, is sometimes present at birth. If radiograms were to be taken of all infants who present physical signs of the maldevelopment, a delayed appearance of these or the additional nuclei which develop during the first year, could be detected and perhaps many of the cretins or thyroid deficiencies could be diagnosed. Another suspicious abnormality which should attract the attention of the general practitioner or obstetrician is delayed healing of the cord or infection of the navel. Englebach cites a case of a fourteen-year old cretin child whose navel had never healed, after all kinds of treatment, but after two weeks of thyroid treatment it was entirely well. Other abnormal happenings in the chronological development of a hypo-thyroid child is retarded appearance of teeth. If there is no eruption of teeth by the sixth month, thyroid insufficiency should be suspected. Other early symptoms in the life of the baby in-

dicating insufficiency of the thyroid gland are retarded growth of the skeletal system, low or backward mental development and late walking and talking.

Now these are not rare, strange or peculiar syndromes, they may not mark the individual by unusual or striking physical characteristics, but yet they are definite evidences of disturbance in growth and development, not uncommonly seen in everyday practice, and it is quite within the realm of therapeutic possibility to largely correct them and perhaps prevent the development of a classical text book picture of cretinism.

Later in the development of a hypothyroid child the appearance is characteristic of cretinism with striking and peculiar syndromes. They grow short in stature with short stubby hands, fingers and toes. The skull varies from the normal and appears proportionately large. The fontanel remains open, the hair is dry and coarse, the face is broad, nose wide and flat, the lips are thick, mouth held open and tongue protrudes. The skin is dry, subject to eczematous eruptions, the tissues have a doughy oedematous appearance and feel boggy to the touch but do not pit. The abdomen is large and there is almost invariably an umbilical hernia. The child is passive, presents a vacant stupid expression, is mentally dull and shows very little interest in his surroundings. These group of symptoms may be manifested in varying degree from scarcely detectable in the early stages, to the most exaggerated type in advanced cases.

DIAGNOSIS.

It must be emphasized that the diagnosis of sporadic cretinism in infants is usually deducible from the physical signs during the first few months of life. Helpful hints in the diagnosis are very often to be obtained from a close study of the parents or the family history, such as elicitation of a hereditary endocrinologic strain, and blood test of the parents for possible leutic infection. Pre-natal estimation of develop-

ment of embryonal life from an endocrine standpoint is possible through observation of the gravid woman. In instances in which there is evidence of hypo-thyroidism, with low basal metabolism during pregnancy, we are told there is very likely to be characteristic an overweight of the fetus and the infant will show a delayed appearance of the osseous nuclei, demonstrated radiographically, and later retarded physical and mental development.

TREATMENT.

It is known fact the thyroid secretion is absolutely necessary to normal physical and mental development and to the normal exercise of mental and physical functions throughout life. Sporadic cretinism is due to the absence of thyroid secretion, in whole or in part. Consequently the proper application of thyroid therapy, theoretically, should accomplish spectacular results. In regard to the efficacy of administration of thyroid gland in cases where it is indicated, we have no better authority than to quote Sir William Osler, who after some years use of this form of organotherapy, wrote: "Not the magic wand of Prospero or the brave kiss of the daughter of Hippocrates ever effected such a change."

Several active substances have been isolated from the thyroid gland all having physiological action, but as yet we are unable to say any one of these substances or any mixture of them is equal to properties of the whole dried gland. Consequently use of whole dried gland is empirically the surest procedure.

It is of special importance to note that different patients show varying susceptibility to the toxic effects of the thyroid gland. Experience has shown that we are very much more likely to overdose a cretinous than a non-cretinous child. This suggests than in apparently simple cases of endocrine deficiency with dominant thyroid syndromes there is a complicated glandular mechanism involved.

In the treatment of these cases it seems to be necessary to reach physiological limits to obtain most beneficial results. A very small beginning, one-fourth of a grain daily, with regular weekly increase of dosage and careful inspection will make for safety and at the same time ensure adequate dosage. Some cases where the margin between the therapeutic and the toxic dose is small will prove very troublesome to treat. The outstanding symptoms of an overdose or toxic dose of the gland are restlessness, fretting, sweating, insomnia, vomiting, diarrhea, tachycardia, loss of weight and exhaustion. It is not difficult to detect these toxic symptoms rather early if frequent observation is made and a weekly record kept. When once the toxic symptoms are manifested, susceptibility seems to be heightened and it is not enough to reduce the dose slightly, but it must be reduced by a considerable amount or perhaps altogether stopped for a period. The length of time for continuing the treatment varies according to end results accomplished. It is definite established fact that after a period of time the thyroid gland of some individuals is able to pick up and carry on without help, while others have to continue the therapy throughout the life cycle.

CONCLUSION.

The line of distinction between sporadic cretinism and infantile myxedema is an artificial one, for who can tell where the latter ends and the former begins. The terms signify degree rather than difference of the endocrine-biochemical disturbance.

Sporadic cretinism represents a symptom complex marked by arrested or abornal or physical and mental development. The various degrees of the cretinoid state depends upon the function of the thyroid gland.

Careful observation and study will reveal that early symptoms of abnormal growth and development can be detected in many suspicious infants, suggesting hypo-function of the thyroid gland.

Thyroid treatment if administered early and during the first year of life and continued in proper dosage for a prolonged period accomplishes spectacular results in a certain number of cases. If not instituted early, more or less maldevelopment, physical and mental, will result that becomes less amenable to corrective therapy as the child grows older.

DISCUSSION.

Dr. J. W. Lipscomb (Columbus): This paper is of peculiar interest to me because of the fact that for some twenty-five years I have had among my clientele a cretin, now sixty-three years old. It has been my privilege to observe the effect of that life upon the family, his anomaly in an otherwise normal family, and the desire and the trouble and the liability incident to that life in the household.

I think we have great cause to pay attention to Dr. Gillespie's paper. Of course, knowing that I had to talk on this paper I looked it up to some extent. While we have not many of these cases (if we have, we overlook them until it is too late), I should like to say that I think the title of his paper comprises the key thought to the whole subject of cretinism, that is the early diagnosis and the early treatment of this disease.

We are told that if we are careful in our observation of the children who come under our jurisdiction that we can discover these symptoms as early as the third month, and that, relatively speaking, every month which passes after that in which the treatment is delayed you have a relatively poor result or end result in your treatment of cretinism by thyroid extract.

I think, then, in this day of conservation and reclamation, that it is entirely within the order of this Association to pay strict attention to the conservation and reclamation of human life in all forms and under all conditions. I, therefore, believe that we will do ourselves, and certainly our clientele, a great injustice if we pass over a subject, with such marked and horrible after effects, carelessly or negligently.

Another thing is, we are all reaching out for vaccine and for serums, for specific, if you please, and this is one of the diseases in which we have a specific and in which, as the doctor says, the results are spectacular and redound to the ability and to the standing of the physician in charge of this sort of case.

The doctor did not add (I know he merely overlooked it) that there is sometimes a necessity for using other things besides the thyroid; sometimes

there is the arsenic and sometimes the cod-liver oil. These things, in addition to the diet, go a long way toward re-establishing the action of the thyroid gland in these young children.

I believe if we would give our attention to these matters and be on the alert to discover these abnormalities in the new-born or in the young life of the child that we would convey to the child a great boon and we would certainly convey a great relief to the family, to our community and to our state, conserve and reclaim the manpower, and, incidentally, make for ourselves some little reputation.

Dr. H. L. McKinnon (Hattiesburg): I am sorry you unfortunately elected me on a committee this morning which kept me out, so I missed the paper entirely and just came in a minute ago so I do not think I should attempt to discuss this question or the paper, not having had the privilege of seeing the paper or hearing it read and only hearing the latter end of it discussed.

However, in hypothyroidism we find a condition confronting us occasionally that is important. I have seen very few cases; only three that I recall. Evidently the point of interest or of importance in cretinism is being able to make an early diagnosis. The three cases that I have treated have been those cases which I delivered myself and recognized early. Two of them died with acute respiratory infections within the first few months, and the third one is still living and doing very well on thyroid treatment.

The recognition of these patients should be done early and that behooves us to inspect our babies and to watch them for the first few weeks and first few months of their lives. Unfortunately, the average doctor who does obstetrics usually delivers a case, perhaps drops by in a day or two, and dismisses the case. That is an unfortunate condition. It has been and will be an unfortunate condition for the country and for the people until our obstetrical practitioners get the idea that they can educate the people and anticipate and catch a bunch of things that they are overlooking and allowing to go unattended.

Personally I don't think any man ought to do obstetrics who hasn't interest enough in the case to keep in touch with it, and closely in touch with it, until the baby and the mother are well back into good health; in other words, six to eight weeks after the delivery, because no mother is well under six weeks after parturition.

If you are going to deliver this case, leaving the mother and the baby to do the best they can, how do you expect to catch these discrepancies from normalcy in the offspring? By this close contact with your practice, there is no excuse for you to

overlook hypothyroidism, because if it is a case of any consequence you will certainly catch it within the first few weeks, or certainly within the first few months, and that is the time to treat these children. The treatment of cretinism isn't alone in the administration of thyroid, but it is in the proper administration of thyroid together with the hygienic and dietetic treatment. Perhaps the hygiene of the average case of that kind counts for about as much as anything else.

My experience has been that we get those cases usually in people who are not very well able to carry out the proper hygiene; in other words, they are people who are not educated sufficiently to know the necessity for hygiene. A great many of these children, or at least some of them, are not able to be breast-fed, so then it becomes your duty to advise a feeding that will take the place as nearly as possible of the mother's milk.

As to the administration of thyroid extract, that in itself should receive very close attention, because these children don't uniformly take the same dose of thyroid. You can start out one on a half grain twice a day and produce a poisoning. You may have to cut that dose to a third, twice a day. On the next case you get you may be able to give the child a half grain three times a day and a little later four times a day, but you must watch for thyroid poisoning. That necessitates your seeing that child every day or every other day at least until you have learned the proper dosage for the child.

I had one case five months ago in which I was giving a half grain three times a day and produced typical toxic symptoms. The child had been going along very nicely on a half grain twice a day.

I might add that in my experience, in the few cases that I have had the dose has usually averaged about one grain a day up to five months. After that time, I perhaps add a third of a grain in the middle of the day, or even a half grain in the middle of the day. Every time you make an addition to the amount of thyroid you are giving, be sure to keep in touch with that child closely until you see whether or not you are going to produce a drug effect.

As long as the child is thriving, getting along pretty well on small dosage, be satisfied. Don't think that you can push the child by increasing the dosage, because you will only cause trouble or delay in your treatment. If you produce a toxic effect of the thyroid, then certainly you must do without the drug for a few days and start back on small dosage and ascend again to where you had the child at first where it was getting along well.

The first symptom we get from too large a dose of thyroid extract, I think, is the languidness whereby the child goes off into a stupor almost as if it were anesthetized. Then there is the cold clammy effect of the skin and then nausea. In one case I had, the nausea came first, but usually these other symptoms precede the nausea. At that time the treatment should be stopped immediately and the patient should be allowed to go forty-eight hours without treatment. Then you can start with small dosage again and get back up to the dose where you have the child improving, and be satisfied with that.

Dr. N. C. Womack (Jackson): This is a very important paper, I think. This classification of this function of the thyroid is usually made by a doctor as cretinism, which indicates an entire disfunction of the gland, and so-called juvenile myxedema in which there is a partial disfunction of the gland. Usually the cretin is born cretin. He can be an artificial cretin. It can come as the result of disease, which is apparently a total disfunction of the gland after birth as the result of some undercurrent disease.

I want to speak to you particularly about juvenile myxedema. It has been stated that it is a rare condition and thought to be a rare condition, whereas it is a common condition. Of course we understand that normal metabolism is controlled by the internal secreting glands as designated from one to plus ten; or plus five, we speak of as normal metabolism and a normal operating thyroid gland. Where will you pick up the juvenile myxedema? It is usually a little fellow who is probably hard to control. He is probably a few pounds overweight. He learns things slowly. Our usual conception of it is that he is an overweight baby with probably a large thymus gland.

Where there is a marked disfunction, it is easy to diagnose. We suspect it immediately when we see him. The mother will bring him in, he will start to run out the door, she will grab him and bring him back but he won't listen. There is no use to punish him. Oftentimes he has an enlarged thymus gland and they always have a disfunction of the thyroid.

I have a number of cases, of which I have photographs, over a period of years and they are still under treatment.

This is not only true of overweight children, but I have seen wizened, underweight children who were cretins. Of course you have to give them iodine in some form. You have to diet them. They have relaxed tissue, umbilical hernias, will not grow, will not assimilate, they can not take food.

I want to impress this on your minds: When you are treating a little, wizened baby, do not say because he is not fat that he is not a juvenile myxedema, because he is. He has a thyroid disfunction to my notion.

There is a great class of children coming into your office every day and they are growing up into manhood and womanhood. We meet them in the hotel lobbies and they come into the office. You people who practice have adult myxedema cases coming into your offices. You look at them and immediately you see the facial expression. They get along poorly in school. It is hard for them to learn. It is hard for them to mind..

The question of thyroid: It seems that is one disease in which the treatment would be easy to know. Of course you can't designate a certain dosage, for an infant, of thyroid. You should begin with a small dose. I was in Dr. Joslyn's clinic three weeks ago and they made the statement that they were giving adult myxedemas (and by the way, they were talking about us fellows who were just as smart as anybody else in the world, who weighed over two hundred pounds but who carried our weight all right in front of us and functioned one hundred per cent) thyroid, beginning with very small doses, but some of them receiving as high as sixty grains a day without any trouble. That is all right, but you have to be careful how you bring them up. Many a fellow or woman who has a backache and suffers from malaise and feels badly all the time and is overweight would feel better if given thyroid.

Outside of that, I want to go back to what the St. Louis man said about a baby weighing ten pounds. He is wrong about that. If the mother had a low metabolic rate before the baby came, it might be true, but from a normal parent, it will not develop juvenile myxedema. I usually see them from two to six months after, because they inherit the element of the thyroid gland from the mother's blood and it takes two, three or four months, or maybe longer to develop. I don't believe that a ten-months' old baby that is quick and bright, sleeps well and eats well, and coming from a good, well muscled people is a myxedema. I used to act on it, but I do not believe in it any more.

Give the measly, inert baby that will not eat, thyroid and build him up. When a child is uncontrollable, overweight, thick lipped and heavy eyed and won't mind anyone, put him on thyroid and you will make a Christian out of him.

Dr. R. A. Strong (Pass Christian): I do not know of any condition that can be traced back into remote antiquity more than cretinism and similar endocrine disfunctions. I am absolutely convinced that most of the characters in Victor

Hugo's "Les Miserables" were cretins or perhaps mongols or some sort of endocrine upsets.

As Dr. Gillespie has very properly pointed out to you, the cases in which we are more particularly interested are the sporadic cases, those that slip up on us, as it were.

I have recently been in the section of the country where the Cumberland Valley joins the Shenandoah, and in that particular section I suppose you could stand on the street corners and pick out the cases of hypothyroidism as they go by. Among those women, that is in the goiter belt, you will find the birth of cretins a rather common thing as compared to other sections of the country, which corroborates Dr. Gillespie's statement that you most frequently see these in mothers who have a hyperthyroid condition or a hypothyroid. It can come quite as often in hyperthyroid mothers as in hypothyroid. There is one thing certain. In regard to the dosage of thyroid that Dr. McKinnon brought out, I think that is a point well taken. We can cause a great deal of trouble, just as much trouble, with the administration of endocrine extracts as we can cause good. Of course the dosage will depend exactly on the degree of environment of the thyroid child, a thing that you have to work out just as Dr. McKinnon has mentioned.

I think Dr. Gillespie, of course, is well aware of that but probably did not have an opportunity to go into detail.

He mentioned in his paper that it is entirely possible, after a period of years of administering thyroid extract, to have a regeneration of the function of the thyroid gland so that you can taper off. I think those who have used insulin extensively, Dr. Rembert and several others, will corroborate the statement that it is entirely possible and a matter of common knowledge that the functions of the Islands of Langerhans in the pancreas are capable of showing some activity after the administration of insulin over a period.

I think we are indebted to Dr. Gillespie for a very good paper and I hope you will carry the message with you. Watch out for the sporadic cases. They can be diagnosed. This coast country is the place where we are most likely to encounter those cases when we are least expecting them, even though we have plenty of iodine in the air, in the crabs and in the water. I have seen cases time and time again in New Orleans, as many as three in one hospital ward. Just watch out for the cases that you slip up on.

Dr. McKinnon mentioned obstetrics. I think the obstetrician should realize that the baby has a little more privilege than the placenta and should be turned over to a man who will look after him, like Dr. Womack or Dr. Gillespie, and look

after these conditions if the obstetrician does not want to. In that case I think the baby is going to get a better deal. Treat the baby better.

President Frizell: The Chair has refrained from entering into the discussion, but I should like the essayist to answer this question in the rejoinder: Did you always notice that these children are nearly always almond-eyed, chink-eyed? That is one of the earliest symptoms of cretinism, as much so as the long lip and tongue.

Dr. G. Y. Gillespie (Greenwood) (closing): I wish to express my appreciation to the gentlemen for their beneficial discussion and addition to the subject. As I said in the beginning, we have a very difficult problem with which to deal. I tried to bring it to you there was one special point I wanted to bring out and that is there is not a distinction between cretinism and infantile myxedema or juvenile myxedema as you want to call it. They are terms that signify degree rather than difference. They are the same thing.

Sporadic cretinism is due to a definite disturbance of the thyroid gland. Infantile myxedema or juvenile myxedema is due to a definite disturbance of the thyroid gland.

I tried to bring out as briefly as possible something concerning the treatment, being very careful of course to start with minute doses, weekly observations of your patient with accurate records kept. If you do that, you can detect the first toxic symptoms that begin to manifest themselves in this hypothyroid child.

I believe, as Engelbach, that cretinism or hypofunction of the thyroid gland can be diagnosed in the new-born infant by the signs and symptoms that occur in the first few weeks of life. There certainly isn't any question of doubt about it that if you study your baby that you are having difficulty in feeding and that the mother has to pick up three or four times a night because of intestinal disturbances and you have that baby on a definitely balanced diet that you know ought to agree with it and you can't find any other thing wrong with it and think of an endocrine disturbance in that child and look towards that end, the chances are that minute doses of thyroid gland will work a miracle in the case. I have seen it.

In regard to the early symptoms that are present, I should like to say that the slant-eye is a symptom of Mongolian idiocy and not cretinism in itself which is a different and definite distinction of the two.

I want to say again that I certainly appreciate what has been said and the additions that have been made to my paper, and I feel that I have been greatly benefited by coming here and getting the opinions of these good men on this very important subject.

THE TOXIC GOITRE.*

CARROLL W. ALLEN, M. D.,

NEW ORLEANS.

In the last twenty-five years much has been learned about the physiological action and pathological changes of the thyroid gland, but much remains yet to be learned. We however know practically nothing regarding the etiology of its diseases and until we do no rational plan of therapy can be formulated.

In the past few years the vegetative nervous system and the ductless glands have been the subject of renewed and intensive study, we have learned that there is an interaction between these hormone forming organs, and that the secretion from one gland either excites or depresses the action of another, but whether this is brought about solely by the hormone contact, or through the intervention of the sympathetic nervous system is still shrouded in doubt.

We do know that excitement, emotions, toxic and septic substances and acute illness play an exciting cause in the production of hyperthyroidism. Mild cases often get well spontaneously or with appropriate hygienic and dietetic measures, and no mild case should ever be operated until after the failure of therapeutic measures. A moderate enlargement of the thyroid often with mild symptoms of hyperthyroidism is frequently seen in young woman just after puberty. These cases almost invariably clear up under a medical regime. These mild cases usually have a gradual or insidious onset, often the enlargement of the gland is the only symptom noticed.

In severe cases the onset is usually acute and the patient can often tell you within a few weeks the date of onset. As a rule the more definite the patient is regarding the date of onset the more acute and violent is the course of the disease. In the fulminat-

ing type the patient may live but a few weeks. Anders reports a case that lived but three days.

In the acute case there is a rapid pulse, heart murmurs, temperature, muscular weakening, exophthalmus, great excitability, delirium, or even mania, vomiting, purging, albuminuria and hemorrhages are common, with emaciation.

The acute fulminating case usually runs a comparatively short fatal course in spite of all that can be done. The treatment of these cases is strictly medical and should consist of ice bags to neck and heart, hydrotherapy for temperature, and sedatives with a non-stimulating diet, principally carbohydrates and milk which should be given freely with an abundance of water. The moderately severe case gradually yields to the above treatment and can be tided over to a quiescent period when all symptoms abate, which interval should be taken advantage of for surgical intervention, before another period of excitement develops. A long continuance of this toxic course or its continual recurrence during the periods of exacerbation leads to fatty degeneration of the vital organs and this may lead to death from secondary causes. I have, however, repeatedly noted the marked improvement and apparent regeneration that has taken place in advanced cases of long standing who have been successfully operated.

We have in the study of the metabolic rate a guide or index to the severity of the intoxication, which often serves as a means of determining our plan of treatment. If the rate is plus 50 or over the degree of toxicity is high and these cases should be handled very cautiously and no surgery hastily resorted to, but the patient put on a medical regime. Further tests should be made in a week or ten days, if the rate is increasingly, surgery becomes particularly dangerous as any trauma may lead to a violent fulminating outbreak with hyperpyrexia, delirium, rapid heart and un-

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

controlable excitement which may prove rapidly fatal.

If the metabolic rate is falling, a further delay is advisable until a stage of quiescence is reached where the rate is fairly constant. Certain chronic cases run a high rate over a long period of time and in these cases undue delay may prove dangerous in exposing the vital organs to serious organic change and possible complications. It is in these cases that the various adjuvants to surgery find a field of usefulness; notable among these agents are the roentgen-ray and radium.

For my own part I have not noticed much difference in the results from the two agents although the roentgen-ray seems to be somewhat preferred. If, however, the results can be stated as being equal, radium is to be preferred as it can be applied with less disturbance to the patient or even without their knowledge.

In the so-called borderline case where we are waiting for a favorable surgical opportunity, the use of boiling water often finds a field of usefulness and I have used it in selected cases with notable benefit. It should, however, rarely if ever be used without exposing the gland and making sure that no damage is done to other tissues. The technic of its use is the same as when used for other conditions. These and other methods are simply adjuvants to surgery and practically every case of severe exophthalmic goitre must seek relief through surgery, if relief is to be obtained. What may prove a dangerous risk during the period of exacerbation may during a remission be safely operated.

Iodine, usually in the form of Lugol's solution, is often of great benefit when correctly used in 5, 10, or 20 drop doses, three times daily for ten days or two weeks prior to operation.

It should rarely be used continuously as its benefits are usually noticed early in its use when advantage should be taken of this opportunity to operate at once. Most

cases coming to the surgeon have already had iodine often for long periods, and in these cases no benefit will be derived from its further use. The indiscriminate use of iodine may be productive of much harm, particularly when used in old adenomatous goiters where it often excites the development of a toxic state.

Surgery of the thyroid owes its beginning largely to the work of Theodore Kocher. The results of his early efforts, about 40 per cent mortality, would have discouraged the ordinary surgeon, but Kocher was not of the ordinary type.

As a result of his efforts and those who followed him we have learned much regarding the treatment and surgery of the thyroid, but much still remains to be learned, and the knowledge which we already have more widely disseminated.

As the result of the progress of recent years, I believe that I can safely make the statement without fear of contradiction that in the hands of the experienced surgeon the mortality rate in the operative cure of exophthalmic goitre will compare favorably with that of the acute appendix.

The post-operative care of the thyroid patient is of great importance, and often neglected, materially effecting the ultimate end results. Prolonged rest, mental and physical, the avoidance of all emotional excitement and a suitable non-stimulating diet are all essential in the proper handling of the patient.

The operative handling of the severe toxic case is of great importance and all fear on the part of the patient should be carefully avoided. Fear is a great stimulant to the toxic secretion of the gland and when the patient is to be kept in ignorance of the operation I much prefer a light colonic anesthesia just sufficient to produce somnolence which when supplemented with a suitable hypodermic permits the patient to be transported to the operating room in an unconscious condition where with the addition of a little gas

the operative procedure is undertaken. I much prefer this plan of handling bad risks to any attempt at operating in bed, which in my experience with the ordinary hospital bed has always proved unhandy and inconvenient.

There are just two rules which I have found of great practical value in handling these cases:

First. At the initial operation never attempt too much. A simple ligation is sufficient. Never be deceived by the patient's apparent condition as the gland may react violently to trauma.

Second. During the final operative stages when the gland is being removed never be afraid to take out too much, leaving 1/8 or 1/10 of the total mass of the gland is ample for all needs of the body.

If too much is left the toxic condition invariably recurs and further operative intervention becomes necessary. If too much of the gland should by chance be removed and symptoms of myxoedema develop, the administration per orem of thyroid substance for a short time will stimulate the remaining portion of the gland until it meets the bodily requirements.

In the operative handling of these cases first ligate one superior pole, which I prefer to do by making an incision on the inner side of the sterno-mastoid. After the gland is freely exposed pass a ligature around all structures which enter the superior pole in such a manner as to include the tip of the gland.

The benefit derived from this simple procedure is sometimes most striking and I cannot believe that the results are due entirely to this minor control of the circulation, but feel that interruption of nerve control must play an important part. The reaction from this simple procedure is sometimes most marked but usually subsides at the end of a few days, when the ligation of the second pole may be at-

tempted a week later. In the event that the reaction following the first ligation has been mild a lobectomy may be attempted at the second operation, but if any doubt exists a second ligation should be performed.

The patients' reactions to these first minor procedures furnishes a reliable guide to their behavior under surgical trauma. Following a double ligation there is usually marked improvement in all symptoms and a delay of a few weeks to several months may be desirable before further steps are taken. Regarding this interval there is no general rule and economic factors often play a part. Too long a delay is inadvisable as the improvement for a short time is often so marked that the patient decides to wait longer and often does not return until the improvement has subsided and all of the severe toxic symptoms have recurred.

Aside from economic factors, which must be considered, it is desirable to postpone the major procedures (lobectomy) as long as the patient shows steady improvement up to two or three months following the last ligation.

However, a too long delay, as above stated, favors the recurrence of severe toxic symptoms which we should always endeavor to forestall.

Following a primary lobectomy we do not run such risks as the mass of gland tissue remaining is much reduced, but here, too, there is no advantage in undue delay and an interval of from two to four months is to be preferred, checked by a further metabolic test before the second lobectomy.

The technic of lobectomy as employed by myself and staff is the result of a gradual evolution.

One side of the gland is exposed in the usual manner and is mobilized from the trachea and slightly drawn outward, one or two fingers are greatly insinuated beneath the gland and it is lifted away from the great vessels. In this position the two poles are readily exposed and easily ligated

as well as any other vessels which may be seen.

The major portion of the gland is then sliced away from its posterior capsule, leaving $1/10$ to $1/8$ of the total gland mass. The fingers behind the gland readily control all bleeding points until secured by forceps. After all ligatures have been tied, with the fingers still behind the capsule it is rolled upon itself by a continuous suture in a cord like mass. This technic greatly simplifies the procedure rendering it much less bloody with less likelihood of injury to the recurrent laryngeal nerve.

The wound is closed in the usual manner with rubber tissue drainage.

The following histories illustrate several different types of cases:

Miss H., aged 39 years, first noticed increased nervousness during August, 1928. She attempted to teach school the following month but was forced to give it up. She entered the Baptist Hospital December 21, 1928, with a history of a plus 50 metabolism rate made two months previously, and having taken iodine. She was extremely nervous, jerking arms, legs and head about continuously. An attempt was made to cool her off with ice bags and sedatives. She grew steadily worse and soon became delirious and comatose after which she was fed continuously with a nasal tube. Temperature ranged from 99° to 104° ; pulse 130 to 140. Heart, kidney, and intestinal symptoms with emaciation rapidly followed. Lugol's solution in large doses was used for a few days with no effect. Death occurred January 18. This was a severe toxic case which resisted all our efforts to check or influence its fatal progress.

Mrs. P., aged 37 years entered Baptist Hospital November 4, 1928. Metabolism rate plus 64. History of long duration of symptoms. November 19, ligation right superior pole. Moderate severe reaction for 36 hours. November 28, ligation left superior pole, slight reaction. December 5, right lobectomy with slight reaction. February 11, left lobectomy. Very little reaction. Discharged February 17.

She has since gained forty pounds in weight with an absence of all pre-operative symptoms. This was a severe chronic type which according to her history had shown no apparent remission in her symptoms since the beginning of the trouble several years previously.

Mr. McC., aged 32 years, had been highly nervous and had a swelling in the neck all his life. Entered Baptist Hospital January 19, 1928. Metabolism test showed plus 101. Right lobectomy January 23. Moderately stormy recovery for several days. Pathological examination showed mixed adenoma and exophthalmic goitre. Discharged February 5, 1928. Re-entered hospital February 22, much improved. Left lobectomy February 24. Examination showed exophthalmic goitre. Discharged March 9. Reports from the patient show a steady improvement with subsidence of all symptoms.

DISCUSSION.

Dr. Urban Maes (New Orleans): The question of the management of thyroid disturbances is too important to be passed over lightly because I believe that thyroid disease is unquestionably increasing in this section of the country. Why this should be so I do not know. It is evident in a study of our case that we are not seeing many of the true exophthalmic types; most of the cases we see are to be classified as toxic adenomata, and the handling is much simpler than that of the exophthalmic type, which has been thoroughly covered by Dr. Allen. The pre-operative preparation is the most important factor, and the thing that gives us most trouble in connection with it is the indiscriminate use of Lugol's solution as a curative agent before the patients are sent to the surgeon. Most of the adenomata that we see the associated with a certain amount of true hyperplasia, and Lugol's solution does definitely control hyperplasia, but it is a question whether it controls the adenomatous element at all. Since the introduction of Lugol's solution, as Dr. Allen has very properly said, the pre-operative preparation of these patients has been much simplified, providing that they have not been treated for months and years beforehand with iodine, so that they fail to respond to it when we are trying to get them ready for surgery. In the fresh, untreated cases 10 days is usually sufficient for the preparation. In the patient who has had Lugol's solution and in whom Reinhoff's phenomenon has become apparent, we do have a great deal of trouble. We are seeing here, as I have said, the adenomatous type, in contrast to the section of the country where goiter is endemic, and where the exophthalmic type is so frequently seen, and I think possibly we are seeing our cases a little earlier. For purposes of treatment we must accept Plummer's classification for a working clinical and pathologic basis. It includes toxic adenomata, which are most prevalent and which rarely occur under 25; true exophthalmic goiters, which usually occur a little younger; and the colloid type, which resembles the simple cyst, which may occur at any age, and which presents no special surgical problems. It is the adenomatous and the exophthalmic groups which furnish our

problems. I differ from Dr. Allen in one regard, that is, the propriety of polar ligation. Since we have learned to control these patients with iodine the necessity for it has been enormously reduced, and it is many years since I have employed the method. Formerly, however, before modern treatment was introduced, it was of great practical value, as he puts it, in testing the patient's power of withstanding thyroidectomy. Now as to the amount of gland to be removed, Dr. Allen is quite correct in saying that in the past we have all removed too little. The small remnants that are left at the poles in securing ligation and the few cells left attached to the trachea in removal from that aspect are ample to carry on thyroid function. In leaving tissue behind to carry on function, we must be extremely careful that we leave no adenomatous tissue, for recurrence is almost inevitable if even the smallest amount is left. I have in mind a patient I lost only recently, who had a characteristically mixed gland, hypertrophy plus hyperplasia, and who had a recurrence after the operation. The recurrence, of the nodular variety, definitely suggested the fact that some adenomatous tissue had been left; she developed a fibrillation and died very shortly.

The adenomatous type, when it recurs, recurs with great virulence, and especially in that type removal should be very thorough.

Dr. C. W. Allen (closing): My experience, unlike Dr. Maes', is that the exophthalmic type of goiter is most frequently seen here, and I am substantiated in that by the result of my laboratory examinations, all done by men trained in the same school, in the past at Touro Infirmary, more recently at the Baptist Hospital, where I now do the bulk of my work. As to polar ligation, I still employ it because the exophthalmic type of patient is very apt to fool you. I have gotten these patients ready for operation, they have promised me their co-operation, and I have seen them go completely out of their heads after operation and be controlled only with the greatest difficulty. I have noticed an idiosyncrasy to digitalis in some of them, to opiates in others. Polar ligation is a method of testing how they are going to react under surgical trauma. The benefits from polar ligation in my opinion are too great to be due entirely to cutting off of the blood supply but I feel are in large measure due to interruption of nerve conductivity.

DISTRIBUTION OF ENDEMIC GOITER IN THE UNITED STATES.

—Studies conducted by the United States Public Health Service during recent years indicate that the distribution of goiter in the United States as disclosed by numerous thyroid surveys, parallels in general, the goiter findings which were recorded among the drafted men examined during the World War.

There are manifestly wide variations in the methods of determining thyroid enlargement. The classification of various degrees and types of involvement also ranges within wide limitations. Uniform procedure is a necessity if findings in different sections of the country are to be compared.

Based upon the occurrence of goiter, wholesale prophylaxis by means of the use of small doses of iodine either as iodized salt or otherwise for endemic goiter is apparently not required in all States.

Individual thyroid surveys disclose foci of endemic goiter in localities not previously regarded as being located in goitrous territory.

Resurveys are desirable for the purpose of learning the extent and character of changes occurring either under natural conditions or after prophylaxis has been instituted.—Bull. U. S. Public Health Service.

NEW ORLEANS

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CONTROL OF HOSPITAL ABUSE.

Through the enlightened efforts of Dr. George Bel, Vice-Chairman of the Board of Administrators of the Charity Hospital, it has been possible to appoint a committee from the staff of the hospital to investigate and to make a survey of the subject of hospital abuse. This committee is under the Chairmanship of Dr. A. E. Fossier, and includes in addition to the Chairman, Dr. J. B. Guthrie, Dr. Emmett Irwin, Dr. R. H. Potts, and Dr. W. G. Troescher. The committee is a most excellent one and certainly, if it undertakes to study the whole subject and possibly to suggest a remedy, it is most likely that some facts of value will emanate from its researches. The members of the committee feel, however, that they can not accomplish all the work themselves, nor that

their individual contribution will be as valuable as it might be unless they have the help and aid of physicians, not only of New Orleans, but also those physicians throughout the state who are interested in the broader problems of hospital abuse, not only in the Charity Hospital but also in other institutions in Louisiana and Mississippi. They, therefore, are urging doctors everywhere to communicate with them with any ideas, suggestions or plans that they might have to mitigate this evil abuse of the charitable facilities of hospitals, which is doing so much to pauperize certain individuals, to corrupt them and to lower their morale while at the same time making demands upon the hospitals and physicians by those who are well able to pay for such services.

The Board of Administrators of the Charity Hospital and particularly the active head of the Board, Dr. George Bel, are to be congratulated upon their broad-minded action. The administrators realize the difficulty of detecting instances of hospital abuse, they appreciate the unfairness of it, and they are anxious and willing to co-operate with the medical profession in an effort to lessen this very nasty form of dishonesty and abominable type of cheating.

FOR SERVICES RENDERED IN AUTOMOBILE ACCIDENTS.

It seems almost farcical to conceive of a bill rendered for services in automobile accidents being paid. Physicians are called upon often during the course of the day or night, and most frequently on Sundays and holidays, to administer first aid care to those injured in automobile accidents. Often it will require traveling some distance to get to the scene of the accident, it takes considerable time not only in the matter of transportation but also in the eating up of the minutes in applying dressing and taking care of the patient properly. The doctor is also called upon to supply gratis splints, local applications and other material which has cost him money. The very great majority of physicians are never remunerated for these services, ren-

dered it is true with the usual Hippocratic desire to succor the afflicted. Is this right, fair or just? No other individual who plays a role in the immediate or later results of the accident from the mechanic to the lawyer is called upon to give his services for nothing. Furthermore, the physician who has the misfortune to conduct a private hospital often has dumped upon him the victims of an accident who may require prolonged hospitalization and assiduous attention, and who are merely a charge on the hospital.

Something should be done about this state of affairs in all justification to the doctor and to the hospital. The doctor can not well refuse to give his services, but most certainly the person responsible for the accident and even those who are injured should be told definitely and clearly that they should be expected to pay the physician for his time, his skill, and the use of equipment. In all likelihood this will not bring about results. The doctor will still give and pay either because the victim has no money or because of legal questions as to the responsibility for the accident. It would seem then that the most likely method of preventing this abuse of the medical profession would be to require of the automobile drivers compulsory insurance applicable to third party risks. The doctor should be a preferred creditor and his bill should be met out of the insurance fund before moneys are turned over to the person who has the claim.

Incidentally, it is rather remarkable that decent folk are perfectly willing to receive charity from an individual who is often a total stranger and who is rendering services out of the goodness of his heart. Certainly such people would not expect to have their automobile repaired for nothing, or to get free gasoline, or to get anything at all except doctors' services free.

THE TREATMENT OF AMEBIC DYSENTERY.

Amebic dysentery is undoubtedly very widespread throughout the United States. We in the South recognize and appreciate

the condition when the patient presents himself to us for treatment. The same cannot be said of other sections of the United States where the disease often passes unrecognized. Despite the fact that amebiasis is promptly identified in this locality, the fact remains that the treatment has been unsatisfactory and chaotic for the most part. There are physicians who are earnest advocates of treatment with ipecac or its alkaloid, emetine. These men claim a large percentage of cures, but were they to follow up their patients they would find that many of those whose symptoms had been relieved during the course of treatment had relapsed and then were treated by others. The same thing applies to the use of stovarsol. It is for this reason, the frequency of relapses, that a report by Jones and Turner* is of particular interest. They report upon a series of patients who were treated for the most part at Charity Hospital and have taken the opportunity of checking up on results of their treatment over a considerable period of time. These authors seem to be most enthusiastic concerning the effect of the drug that they used. Ninety per cent of those patients with a satisfactory follow-up were shown to be symptom-free from one to three years after treatment, the whole group averaging a period of twenty months. This is a relatively short interval, during which relapse might not occur, but all the patients were given a follow-up stool and proctoscopic examination.

The authors employed iodoxyquinolin sulphonic acid, which sells under the trade name of yatren, anayodin or quinoxyl. One gram of the drug was given by mouth three times a day for a week. In the second week treatment was discontinued and in the third week a second course was given. In this series of cases practically all of the patients had a prompt and satisfactory improvement in their condition. It seems from this report that the drug merits extensive trial.

*Jones, P. H. and Turner, Roy: Iodoxyquinolin Sulphonic Acid in the Treatment of Amebic Dysentery, Jour. Am. Med. Assn., 93: 583, 1929.

HOSPITAL STAFF TRANSACTIONS

CLINICAL MEETING—ISSAQUENA-SHARKEY-WARREN COUNTY MEDICAL SOCIETY—CLINIC BY STAFF OF VICKSBURG SANITARIUM

September 10, 1929.

Abstract.—Carcinoma of the Descending Colon; Resection—Dr. A. Street.

Patient—White, male, age 19; admitted to hospital July 26, 1929.

Complaint—Severe pain just inferior to the left lower lateral rib margin, radiating to left inguinal region; duration nine months. Has noticed fever for two weeks, constipation marked and increasing. Occasional attacks of bladder frequency without tenesmus. Anorexia and loss of 25 pounds of weight in last 60 days. No bloody stools. No other remarkable symptoms.

Physical Examination—Poorly nourished and pale. Tonsils rather large and crypts contain fluid yellow pus. Abdomen slightly distended and tympanic; no rigidity; tenderness in left lower quadrant and fixed mass in this region, just mesial to anterior iliac spine. Mass is irregular in contour, firm, and about two inches broad by three inches in length. Further physical examination, including cystoscopy, showed nothing remarkable.

Radiographic and fluoroscopic examinations of the colon after barium enema showed marked narrowing of lumen of the bowel at junction of descending colon and sigmoid, the filling defect being compatible in character with that caused by a growth.

Blood examinations showed: Erythrocytes, 4,056,000; Hemoglobin, 75 per cent; Leukocytes, 8,900; and Kahn tests, negative.

Urine examination showed nothing remarkable.

Operation—July 29; left rectus incision opposite umbilicus. There is a large nodular growth, involving the lower descending colon, firmly fixed to abdominal wall laterally, and extending into upper portion of the sigmoid colon. Portion of mesosigmoid close to growth is indurated. Growth and adjoining bowel were mobilized, beginning by incising the peritoneum laterally, and rolling the bowel inward. At the point of fixation, some of the lateral abdominal wall was removed with the growth. The mesosigmoid was divided mesial to the indurated portion. The blood vessels and peritoneum on the inner side of the bowel segment were divided and the edges of the peritoneum brought together as well as possible. The two limbs of the bowel loop were sutured together up to the level of emergence from the wound, the bowel segment containing the growth being delivered to the surface of the abdomen and allowed to remain there undetached.

The wound was closed to the exit of the bowel. Transfusion of 600 cc. of blood was given shortly after the operation. After 48 hours, the bowel was divided with the cautery at the surface of the abdomen, removing the growth-bearing segment. After two weeks, one blade of a strong Kocher clamp was placed in each of the bowel ends and the clamp closed, crushing the spur according to the Mikulicz technic. The clamp dropped off on the fourth day and patient was allowed to go home for two weeks. He will then return for closure of the fistula.

Tissue pathology by Dr. Lippincott, showed adenocarcinoma, Grade III.

Abstract.—Ano-Rectal Carcinoma; Two-Stage Resection.—Dr. A. Street.

Patient—White, male, age 65; admitted to hospital August 13, 1929.

Complaint—Bleeding and protruding hemorrhoids. Has been keeping bowel movements soft with mineral oil to avoid pain at stool. Has had some similar trouble for forty years, but worse for past three months. No marked loss of weight. Good appetite and no digestive disorder. No increased urinary frequency.

Previous history—Typhoid fever at age of 19.

Family history—Mother died of cancer.

Examination—Well developed, elderly man, rather thin. General examination shows nothing remarkable. Systolic blood pressure 130. Local examination shows external hemorrhoids of moderate size. There is an indurated area on the posterior wall of the anal canal, extending for about one-half inch into rectum. Inspection of this area shows it to be about one-half-inch wide, with a raw, bleeding surface and thickened margins. Inguinal glands are not enlarged. Blood and urine examinations show nothing remarkable. Biopsy showed squamous cell carcinoma.

Operation.—On August 14, 1929, under ethylene anesthesia, the abdomen was opened. No metastatic lymph nodes were palpable. The liver contained no palpable nodules. The upper portion of the sigmoid was delivered and a permanent colostomy easily performed. The gut was opened in 48 hours. Upper segment functions well. Lower segment was kept clean by sterile saline irrigations. On September 4, 1929, under spinal anesthesia, perineal excision of the anus and lower rectum was done, the sphincter muscles and a ring of the levator ani being removed. The peritoneum was not opened. The rectum was divided well above the growth and stump inverted. Wound was closed to exit of a cigarette drain.

Patient has taken nourishment uninterruptedly and seems to be making a rapid recovery.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

NEWS AND COMMENTS SPECIAL NOTICE.

The Journal Committee has taken steps to dispose of the large accumulation of surplus copies of the Journal. Opportunity is therefore given to members of the Louisiana State Medical Society to secure any copies of the Journal which they might desire to complete their set. The Journal will, therefore, appreciate your giving this your prompt attention, and letting us know your wishes in this regard before final disposition is made of this surplus accumulation.

A. A. Surgeon J. G. Wooley, U. S. P. H. S., has been directed to proceed from Carville, La. to Augusta, Ga., for the purpose of attending the Richmond County Medical Society to be held October 17, at that place.

Mr. and Mrs. James Clyde Selser announce the marriage of their daughter, Florence Gourrier, to Dr. Clifton Tate Morris, on Tuesday, August 20, 1929.

The dedication of the William H. Welch Medical Library and the Department of the History of Medicine, the Johns Hopkins University, will be held in the Great Hall of the Library, 1900 East Monument Street, on Thursday, October 17, 1929.

GORGAS MEMORIAL INSTITUTE OBSERVES 75TH ANNIVERSARY OF BIRTH OF WILLIAM CRAWFORD GORGAS

October 3 commemorates the 75th anniversary of the birthday of one of the great chevaliers of medical science—William Crawford Gorgas, physician, sanitarian and army officer, who freed Havana and the Panama Canal Zone of yellow fever.

The Gorgas Memorial Institute, with headquarters at 1331 G. Street, N. W., Washington, D. C., founded to honor the name and achievements of Dr. Gorgas, makes the announcement that during the past year the two-fold purpose of Gorgas, Health Education and Research, has been carried forward in an active program which has benefitted directly and indirectly the profession of which he was a member.

THE WEEKLY HEALTH INDEX.

The week ending August 17 shows that in New Orleans there were total deaths of 131, with a death rate of 16.0. Fourteen of these deaths

were in children under one-year of age, the infant mortality rate being 70. These figures are approximately the same as the preceding year. During the week of August 24, the total deaths were 125, with a death rate of 15.2. There was practically no change in the infant mortality rate. During the corresponding week one-year ago the death rate was 19.2. During the week ending August 31, the total deaths numbered 130, with a death rate of 15.8. The infant mortality rate had jumped up to 89. The corresponding week last year the total deaths were 118, with a death rate of 14.4. The last week, for which figures are available, ending September 7, the total deaths were 130, death rate 15.8, infant mortality approximating the previous week. One year ago in the corresponding week the total deaths numbered 136, with a death rate of 16.6. The death rate in the City of New Orleans is invariably higher than in other big cities of the country. The large number of patients that are shipped in from the State of Louisiana to die in the Charity Hospital should not be forgotten when these figures are evaluated. If the deaths of patients not residing in New Orleans were deleted the death rate of the city would be considerably lower. It probably would compare with New York with a death rate of 11.3, Kansas City 11.4, or Pittsburgh 11.8.

MEETING OF THE COLLEGE OF SURGEONS.

The American College of Surgeons will hold its nineteenth annual Clinical Congress in Chicago, October 14-18. Headquarters will be at the Stevens Hotel. An intensive program is being planned to make this home-coming event the greatest in the history of the College. The Hospital Standardization Conference will consist of morning and afternoon sessions on Monday to Thursday inclusive. There will be a series of clinical demonstrations given by George W. Crile, Cleveland; John B. Deaver, Philadelphia; John M. T. Finney, Baltimore; Charles H. Mayo, Rochester, and others. Monday evening's program will include an address of welcome by the Chairman of the Chicago Committee on Arrangements, Dr. Herman L. Kretschmer, the address of the retiring President, Dr. Franklin H. Martin, Chicago, the inaugural address of the new President, Major-General Merritte W. Ireland, Washington, D. C.,

and the John B. Murphy Oration in Surgery by Professor D. P. D. Wilkie of Edinburgh. Among the foreign visitors will be: Dr. James Heyman of Stockholm, Dr. Thierry de Martel of Paris, Visconte Aguilar of Madrid, and Mr. Herbert Tilley of London. Tuesday, Wednesday and Thursday evening sessions will consist of scientific papers presented by surgeons from the United States, Canada and from abroad.

SOUTHERN MEDICAL ASSOCIATION,
MIAMI, FLA.

For the accomodation of those who will attend the above convention from New Orleans and vicinity, the Louisville & Nashville Railroad will operate special through sleeping cars from New Orleans to Miami, leaving New Orleans on train No. 2 at 9:30 p. m. on the 17th and arriving in Miami at 7:15 a. m. on the 19th. This will avoid the change at Jacksonville, which is necessary in regular service.

The return schedule of regular train service offers a departure from Miami at 9:00 p. m. on the 22nd, with an arrival in Jacksonville in time to connect with the Seaboard Air Line leaving Jacksonville at 8:50 a. m. on the 23rd, arriving New Orleans at 6:50 a. m. on the 24th, but if there are a sufficient number who will return to New Orleans on the same train and date, the L. & N. R. R. shall be more than pleased to also operate a special sleeping car for their accomodation from Miami through to New Orleans.

The Louisville & Nashville Railroad will further authorize a reduction in the fare to Miami for account of your Convention, the reduced round-trip fare from New Orleans being \$52.83, for a return final limit of November 30th, and \$56.36 for a return final limit of thirty days from date of sale. Corresponding low fares will also apply from points west and throughout the State. These reduced fares will be available for the passage of all members and the dependant members of their families upon presentation of the regulation form of pink Identification Certificate, which must be secured through the Secretary of the Southern Medical Association, and will permit the commencement of the going trip on any day during period November 15th to 21st, inclusive.

The pullman charges from New Orleans to Miami are \$10.80 for a lower berth; \$8.70 for an upper berth and \$39.00 for a drawing room. The same charges apply in the reverse direction.

For reservations or further information call Mr. E. H. Stall, City Passenger Agent at Ra. 4687 or 229 St. Charles St.

CORRESPONDENCE

I would like to add just a word to what Dr. Herold said in your last issue. If you will take the trouble to investigate, I think you will find that Louisiana is one of the few states that does not contribute something, at least, toward the expense of its delegates.

I had this honor conferred upon me and I assure you I fully realize the greatness of it and am very proud of it and enjoyed the privelege both at Boston and St. Louis, but I can also assure you these trips are expensive.

It seems to me it is time we were looking at this matter from this standpoint with a view to getting proper representation in our national organization.

Very respectfully,

WILLIAM H. BLOCK, M. D.

A LETTER OF LAFACADIO HEARN AND AN
OLD FILE OF THE NEW ORLEANS
MEDICAL SURGICAL JOURNAL.

To the Editor:

Do you think your colleagues would be interested to recall a passage from a letter of a one-time resident of New Orleans, and to follow the train of thought it aroused?

The other day, I was reading "The Life and Letters of Lafacadio Hearn" and, in a letter written to H. E. Kiebiel, in 1878, I found the following description of an outbreak of yellow fever in New Orleans:

"All over town there are little white notices pasted on the lamp-posts or the pillars of piazzas, bearing the dismal words:

"Décédé
Ce matin, à 3 ½ heures
Julien
Natif de—"

and so on. The death notices are usually surmounted by an atrocious cut of a weeping widow sitting beneath a weeping willow—with a huge mausoleum in the background. Yellow fever deaths occur every day close by. Somebody is advocating firing off cannon as a preventative. This plan of shooting Yellow Jack was tried in '53 without success. It brings on rain; but a rainy day always heralds an increase of the plague. You will see by the *Item's* tabulated record that there is a curious periodicity in the increase. It might be described by a line like this—(Here is a rough curve of frequency, with irregularly placed peaks of irregular height. R.M.H.). You have doubtless seen the records of pulsations made by a certain instrument for detecting the rapidity of blood circulation. The fever actually appears to have a pulsation of graduated increase like that of a feverish vein. I think this demonstrates a regularity in the periods of germ incubation, affected, of course, more or less by atmospheric changes."

The letter itself interested me because of the tragedies it recorded and the quaintness of the notices of death described. It seemed strange, also, that the mind of one who apparently was a purely artistic genius should be thinking in terms of phlebograms, "germ incubation" and periodicity of epidemic disease.

The evening on which I read this letter was not a very busy one and there was time for a picture to come to mind. It was of a crippled old man, with a benevolent face, standing on the floor of a large room in the Century Club in Panama. He was addressing a meeting at which were assembled some of the world's foremost authorities in tropical medicine, and the room was quiet with respect for that old man. He was Henry Rose Carter. "Even today," wrote M. D. Gorgas and B. J. Hendrick,² "Carter's work is not as well known to the layman as that of Reed and Gorgas, yet Gorgas himself said that it places Carter in the class of the great original workers of our time!"

Physicians know that it was Henry Rose Carter who first showed "that a lapse of twelve to fifteen days is necessary before a case of yellow fever becomes dangerous to others."³ I thought it would be interesting to read exactly what Carter wrote;

so I went to the clinic's file of the "New Orleans Medical and Surgical Journal," and this is what I found at the conclusion of Carter's original article:⁴

"There is of course, no definite limit of time at which we would call the situation 'safe,' or 'unsafe,' but hope of safety increases with the passage of the third week, and as the time beyond this passes.

"This law (one will admit it at least as a working hypothesis) is also of value in predicting the progress of an epidemic which will spread. From the first (infecting) case to the first group of cases, infected at his house, is generally from two to three weeks. These form new foci (the original one remaining active), and in from two to three weeks more the second group of cases appears. At this time, four to six weeks, the fever should be 'scattered' in tertiary foci, just beginning. Prior to this it is found **only in those who have had a common exposure**, seldom then in more than four to eight places, although it is not the number, but the common exposure, that is in question."

Carter made his study in 1898 and published it in 1900. Hearn wrote his letter in 1878. Hearn's graph is just a pen scratch; Carter's study is a scientific triumph. Is it possible that the content of Hearn's letter is an example of that insight of which an artistic nature sometimes is capable, or had he received a hint on the incidence of the disease from his friend, Dr. George M. Gould of Philadelphia or Dr. Rudolph Matas of New Orleans to whom he dedicated his story "Chica?"

RICHARD M. HEWITT, M. D.

Rochester, Minnesota.

Septemebr 17, 1929.

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MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

The Staff of the Anderson Infirmary of Meridian met on September 13 and was organized with the following officers:

Chairman, Dr. H. F. Watkins
Secretary, Dr. C. J. Lewis.

A resume of the work of the hospital for the past month was presented and two papers were read and discussed,—Foreign Body in the Rectum, and Spinal Anesthesia.

Twelve members of the Staff attended the meeting. It was voted to meet regularly the first Friday of each month.

Although somewhat delayed, recognition of outstanding service has recently come to Dr. Richard M. Boyd of Aberdeen. On March 20, 1929, he was awarded a silver star by the United States War Department for gallantry in action at Cuisy, France, on the night of October 7, 1918, while serving as First Lieutenant of the Medical Corps, attached to the 146th Field Artillery.

Dr. Boyd is a native of Nettleton, Miss. His parents, of Scotch-Irish descent were natives of South Carolina, having moved to Mississippi shortly after Civil War. Dr. Boyd received his literary training at Providence College, Nettleton and his medical degree from the Memphis Medical College in the Class of 1901.

Dr. Boyd is a member of the Thirteen Counties Medical Society, having been one of its organizers and its second president; of the Mississippi State Medical Association, of which he has been a vice-president; of the Southern Medical Association; and the American Medical Association.

In the pioneer days of hygiene and sanitation in Mississippi, Dr. Boyd conducted a column on rural sanitation in "The Progressive Farmer," then edited in the State. At about this time also he was instrumental in influencing the president of the Farmers' Union to secure the passage of a resolution asking for an increased appropriation for the Mississippi State Board of Health, by the legislature.

When the United States entered the World War, Dr. Boyd volunteered his services in April, 1917. He was commissioned a First Lieutenant in June, 1917, ordered to duty July 3rd, 1917, and received his military training at Fort Oglethorpe, Georgia. He sailed from Camp Merritt, New Jersey, in December of the same year and returned to the United States in July, 1919. He made a sanitary survey of the Libourne, France

area before the arrival of troops, and there established a hospital, which later was made Training Center, No. 2. He was actively and continuously engaged in four major campaigns without the loss of a day,—Champagne-Marne, defensive; Aisne-Marne, offensive; St. Mihiel, offensive; and Meuse-Argonne, offensive. He was twice gassed, each time refusing to give up his post of duty.

After the signing of the Armistice Dr. Boyd was with the Army of Occupation in Germany until March 1, 1919, when he was granted permission to attend courses at the University of Nancy, France, doing special work in internal medicine. On June 30, 1919, he received a diploma from that institution. While in Nancy, Dr. Boyd was awarded a Medal of Honor by the French in recognition of his army service. He was promoted to Captain in May, 1919. He was honorably discharged at Camp Shelby, Miss., August 15, 1919.

Dr. Boyd resumed the practice of medicine in Aberdeen in September, 1919, where he devotes his attention to internal medicine.

The following letter under date of June 27, 1929, shows well the esteem in which Dr. Boyd was held by his fellow-officers:

"Information has reached me that an effort is being made by a number of our men of the 146th Field Artillery to obtain proper although long delayed recognition of the meritorious service rendered by you while serving in that organization. Nothing could please me more and I know of no one more deserving of this honor.

"I particularly recall the mess we had at Cuisy, I think the seventh of October, 1918, when enemy shells exploding among the ammunition supply of F Battery opened up our own gas shells and just about cleaned out an entire gun crew. My position was immediately to the left of F, and I recall that you got most of these gassed men into an ambulance, and when our ambulance was wrecked by shells, you exposed yourself to unusually heavy fire to obtain another ambulance and transfer the wounded.

"I also recall that you refused to leave the lines for treatment after this exposure to gas, and remained with us under heavy fire, treating a number of wounded from various organizations. I particularly recall this as you picked up a man badly shot in both legs, near my position, and put him on my blankets which I had in a fox hole in the little orchard just in the rear of my guns.

"There are numerous other instances where your service to the outfit was far beyond what could be considered 'line of duty,' and you may be sure that every man in the organization will be glad to know that recognition is being taken of it. In the event that this letter may be of interest to any concerned, I am making it in the form of an affidavit.

(Signed) J. P. BARCLAY,
Formerly Captain Battery E,
146th Field Artillery."

The first meeting of the Central Medical Society after the summer vacation, was held at the Edwards Hotel, Jackson, September 17. The scientific program included the following:

Urinary Antiseptics.—Dr. Temple Ainsworth, Jackson.

External Otitis, Its Cause and Prevention.—Dr. G. E. Adkins, Jackson.

Dr. Hugh A. Gamble, President of the Mississippi State Medical Association made his postponed visit to the Society, and gave a most interesting address on "The Obligation Existing Between the Physician and His Medical Society."

Light refreshments were served after the meeting.

We regret to announce that Dr. Felix J. Underwood, Executive Officer of the Mississippi State Board of Health, continues ill with undulant fever. He has now been in the hospital for more than eleven weeks.

Three fellows of the Rockefeller Foundation have been visiting the various offices of the Mississippi State Board of Health as well as the offices of the County Health Departments of Hinds and Bolivar Counties. The visitors were Dr. Pablo de Jesus of the University of the Philippines; Rafael Martinez Ponte, a sanitary engineer from Venezuela, and Francisco Solana, connected with the health department of the Spanish government.

Appropriations for full-time health departments beginning January 1, 1930, were made by the Boards of Supervisors of Georgia, Madison, and Marshall counties during the month. In Lowndes County an election is to be held to determine whether or not an appropriation will be made for health work on a full-time basis.

The regular quarterly meeting of the Northeast Mississippi Thirteen County Medical So-

ciety, was held at Masonic Hall, Baldwin, on Tuesday, September 17. The program announced by Secretary J. M. Acker, Jr., was as follows:

1. Meeting called to order by President J. R. Hill.

2. Invocation—Rev. A. M. Overton.

3. Address of Welcome—Judge W. M. Cox.

4. Response—President J. R. Hill.

5. Reading and adoption of minutes of last meeting.

6. Minor Eye Injuries and Their Care—Dr. S. L. Hollingsworth, Columbus.

7. Work Among Crippled Children in Mississippi—Mrs. Mary S. Baker, State Bureau of Child Welfare.

8. Treatment of Some of the Common Fractures—Dr. E. Dunbar Newell, Chattanooga.

Discussion opened by Drs. Sutherland and W. W. McRae.

9. A Few Points on Infant Feeding—Dr. J. S. Green, Tupelo.

Discussion opened by Drs. W. W. Robertson and J. M. Hood.

10. Intravenous Therapy—Dr. E. B. Burns, Ecu.

Discussion opened by Drs. R. B. Cunningham and W. N. Reed.

11. Business session.

Luncheon was served at the Baldwin Hotel at 1 P. M. The scientific session was held immediately afterwards.

Some of you Secretaries of the large County Societies of the State can well take note of the interest shown by some of the Secretaries of our smaller societies. The following letter from Dr. J. Sidney Eason, Secretary of the Tate County Medical Society shows his willingness to co-operate in making this department of the Journal worth while.

"Sorry to report, but we failed to have a meeting of our Society this month. I believe that I sent you programs and notices of the last two meetings which were well attended. We have only nine physicians in the county and all of them are active members of the Society. We just lost interest some way, and do not meet regularly. We are busy also. At the beginning of the war in 1917, we had twenty-four physicians in this county and to have them cut to nine, makes extra work for all of us. Any news that you can get from these statements will at least show how

few of the young doctors are going to the country and small towns to practice; also that the day will soon come when we will either have to group patients in the small towns or arrange small hospitals in order to reach those that are sick. Take the West end of the county here. In 1917 there were seven doctors west of the rail road in the smaller towns. Now we have only one man west of the railroad in the whole county; not another for thirty miles or more. Going East, we have only one man between here and Holly Springs. That is forty miles. All of this is stated so that you may understand what is needed. News of this kind should be known.

"We have had about twenty or twenty-five cases of typhoid fever reported in this county this year to date. This is more than we have had for a whole year for some time past. I was first made Health Officer in 1912. The year before that we had something over three hundred and seventy-five cases of typhoid in the county and had never used vaccine. I started immediately to vaccinate and I continued in office until 1922, continuing to vaccinate. The last few years that I was in office, we averaged, as I remember, less than twenty cases of typhoid a year. Vaccine was not pushed for the next four years and now we are beginning to see the loss as shown by the number of cases as reported.

"I came back into office two years ago, and started vaccinating again and we are pushing it more all of the time. This year to date, with the help of a few other doctors over the country, have vaccinated a large number of people. Our records show that 713 were vaccinated during July and there were only three of the doctors reporting. As the vaccine was sent to every doctor or offered to every doctor if used, I am sure that there were more vaccinated in July than the records show. We have also given over two hundred vaccinations of toxin-antitoxin in the last year, besides other vaccines that I am giving, such as small pox, and influenza. By the way, while most of the doctors claim there is very little if any thing gained by giving influenza vaccine I know different, for I have given it for ten years and have never seen a case of influenza or pneumonia in a single patient that had been vaccinated. Nor have I seen a patient that had to be treated for ordinary colds and coughs. If they take cold at all, it will pass away within twenty-four to thirty-six hours without treatment. That is worth the price, and I will be glad when the State Board of Health is able to furnish this vaccine as it does typhoid. Of the two, I would rather have the influenza vaccine if I could only have one of them.

"I have succeeded in having most of the consolidated schools of the county build sanitary pit toilets and am sure that all of them will have such toilets before school opens. I also have the negro schools interested in sanitary toilets and have been able for the first time in all these years to interest the negroes in vaccination, cleanliness, and health. They are coming in strong now, and while the greater number of them do not know what it is all for, they come in larger numbers each day for their 'shots.' They hear that it is something free, and they want everything going free, from G. U. to old time religion.

"There are many other things of this kind that I am doing and trying to do as part time health officer. But I don't see how you will be able to get any news out of it. Neither do I see how you will get any news out of this scattering letter. But as you have insisted that I send something, I have sent much. Such as it is, I leave it to you to pick anything that can be used in the Journal and word or arrange it as you see best.

"Hope to be able to report something that will be real news or will at least come under that name before long. We are doing so little here that there is nothing that would interest the outside world."

SOME HIGH LIGHTS IN MISSISSIPPI MEDICAL HISTORY.*

(Continued)

Pusuant to adjournment, the Association met in Vicksburg, April 4th, 1870. Several interesting cases were reported. A tumor removed the day before by Dr. Baird, of Yazoo County, was exhibited. Dr. Hunt, of Vicksburg, reported the removal of an ovarian tumor. Dr. Booth, of Vicksburg, reported a case of aneurism of the ascending aorta, which had caused absorption of part of the sternum and ribs. Dr. Hunt also reported a case of ankylosis of both maxillary bones relieved by operation. Dr. D. B. Nailor, of Warren County, reported a case of abscess of the right lung, simulating aneurism. Dr. Hill reported a case of atresia vaginae in which no uterus could be found and Dr. Balfour a similar case in which the catamenia had appeared in girlhood but had not returned for twenty years.

On motion of Dr. Steinside, a committee (Craft, Mitchell and Baley, of Jackson) was appointed to memorialize the legislature to appoint an examining board to examine all persons proposing to practice medicine on the state. Officers elected for the ensuing year were: S. V. D. Hill, president; A. B. Cabaniss, D. B. Nailor, C. B. Gallo-way, and B. F. Kittrell, vice-presidents; Dr. McConnell, recording secretary; J. R. Barnett, cor-

(*Facts gathered from a History of the Mississippi State Medical Association, published in 1910.)

responding secretary; W. Y. Gadberry, treasurer. The Association adjourned to meet the next year in Meridian."

Dr. E. F. Howard, of Vicksburg, contributes the following "interesting note":

THE PILGRIM'S PASSPORT.

A pilgrim worn and traveled stained,
Draws near the pearly gates,
With faltering steps he slowly treads,
Then stops and hesitates.
Before him lies the journey's end,
Most wondrous to behold,
Its battlements of dazzling white
And streets of burnished gold.

In silent awe he bows his head
And breathes an humble prayer
That he may not be turned away
But gain admittance there.
When lo, he spies an aged man
In flowing robes of state—
St. Peter by the portal stands,
The guardian of the gate.

The good old Saint, with kindly smile,
Says, "Friend, thou art lost, I fear,
Or hast credentials on thyself
To gain admittance here?"
The pilgrim then with trembling hand
And worried, anxious air,
Goes fumbling through his tattered clothes
To seek his passport there.

Naught can he find of what he seeks,
"Tis gone, good Saint," says he,
"All I can find are some receipts,
These I present to thee."
St. Peter slowly scans them o'er
And ponders long and well,
Then sadly says, "My friend, I fear
Thou are doomed to go to hell."

"But hold, my man, what have we here?
Or do mine eyes deceive?
Upon my word; receipted bills
From doctors, I perceive.
Canst thou abide within these walls?
I'll say thou canst, and more:
What e'er the faults against thee stand
These pay in full thy score."

"Come, Gabriel, blow a mighty blast
Upon thy trumpet long,
Swing wide the gates of Paradise
Call forth the heavenly throng.
Life up your voice in joyful praise
O'er yon resounding hills,
Give welcome to this worthy man
Who paid his DOCTOR'S BILLS."

—R. C. Deppen, M. D. in Medical Pocket
Quarterly.

After a month of silence Dr. I. W. Cooper, of Meridian, Miss., again becomes a contributor to this column with the following:

"This is to advise you that my fears were well founded as I have no births to report among the doctors in this vicinity since the last one reported about two months ago, and I have not noticed any indications of any prospects. I regret very much to have to make this report but nevertheless it is true.

"The East Mississippi Medical Society held its last meeting at the Court House in Philadelphia, Miss., on August 15. About forty physicians were present and an excellent program was presented. Dr. V. B. Philpot, of Houston, Miss., had a very able paper on Uterine Hemorrhage. This paper was fully discussed. Dr. Brown, of Meridian, presented an illustrated paper on the X-ray findings in heart conditions. Dr. Brown is a new-comer in this territory, being in charge of the X-ray department at the Meridian Sanitarium.

"Dr. T. D. Boudreaux and Dr. C. H. Stingley spent several days at the Mayo Clinic and at the hospitals in St. Louis and Chicago. They report a very enjoyable trip.

"Dr. Albert C. Bryan and family have returned from a delightful motor trip to Texas.

"You will find herewith attached a report of the monthly staff meeting of the Meridian Sanitarium. This was a very enjoyable affair, especially as to the eats. The dietician did herself proud in serving this dinner.

"Dr. A. G. Touchstone and wife spent several days on the Mississippi Coast for their vacation.

"Dr. and Mrs. J. H. Rush with Dr. Leslie V. Rush spent several days on the Coast during August.

"Dr. and Mrs. H. L. Rush motored to Hot Springs, Ark., where they spent several days.

"I hope that in my next report that I will be able to furnish you with the reports of the staff meetings of Rush's and Anderson's Infirmarys.

"Dr. Franklin G. Riley intends at an early date to build a Children's Clinic. This clinic will be modern and up to the standard in every respect.

The regular monthly staff meeting of the Meridian Sanitarium was held on August 30 following a chicken dinner served at 7:00 P. M.

The Hospital report of July was presented by Dr. S. H. Hairston and discussed by the staff.

Dr. F. G. Riley reported a series of interesting blood transfusions into the peritoneal cavity in infants; also a case of abscess of the brain following a nail puncture of the skull.

Dr. I. W. Cooper reported a case of carcinoma of the cecum.

Dr. S. H. Hairston reported a series of cases in which spinal anesthesia was used according to the Pitkin method. He also reported a case of orchitis and phlebitis treated with diathermy.

An interesting surgical clinic in charge of Dr. George A. Brown was held at the Water Valley Hospital, Water Valley, Miss., on Friday, August 30. Included were Appendectomy, bullet wounds of the stomach; thyroidectomy; amputation of fingers; tonsillectomy and adenoidectomy (4 cases).

The regular meeting of the East Mississippi Medical Society was held at Philadelphia, Thursday, August 15. Following is the program announced by Secretary J. E. Anderson:

Summer Diarrhea—Its Management and Treatment. Dr. W. H. Banks, Philadelphia.

Diagnosis of Mediastinal Lesions. Dr. Barton W. Johnson, Meridian.

Surgical Paper. Dr. H. F. Magee, Jackson.

Uterine Hemorrhage. Dr. V. B. Philpot, Houston.

American Spa. Dr. Oscar W. Dowling, New Orleans, La.

Dr. G. W. Gill, of Newton, spent the month of August in New Orleans, taking some special work.

Dr. J. G. Logan reports the following from the Chamberlain-Rice Hospital, Natchez, Miss.

"Dr. J. F. Chamberlain visited the Mayo Clinic for several weeks during the summer.

"Dr. Raymond T. Smith is recovering from an injury to his hand received in an automobile accident some days ago. During July Dr. Smith attended the Clinic of Dr. Franz Haslinger of Vienna on "Bronchoscopy and Oesophagoscopy" in Dallas, Texas.

"Additions to hospital equipment during the past month were an H-H Inhalator; Keleket portable X-ray unit and improved fireproof cabinets for X-ray films.

"The following cases were reported by Dr. J. C. Rice and discussed at the August staff meeting:

1. A recent series of cases of intestinal obstruction:
 - a. Gunshot wound with amputation of appendix and perforation of caecum, followed several weeks after operation by partial obstruction caused by adhesion bands.
 - b. Mild partial obstruction of a week's duration in a child eight years of age. Distinct volvulus received by surgical intervention.

- c. Negro girl sixteen years of age. Partial obstruction for two weeks with final total obstruction. Operation revealed pelvic adhesions with strangulated loop of ileum and gangrene."

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held at the Vicksburg Sanitarium, on Tuesday, Sept. 10, the members of the Society being the guest of the staff of the Sanitarium. After a supper, the following program was presented:

Sodium Thiosulphate in Mercury Poisoning. Dr. L. E. Martin, Anguilla.

Discussed by Drs. I. C. Knox, W. H. Scudder, A. Street, and E. F. Howard. Dr. Martin closed.

Clinic by the staff of the Vicksburg Sanitarium:

1. Adeno-carcinoma of the Parotid Gland. Dr. G. M. Street.

2. Carcinoma of the Descending Colon; Excision. Dr. A. Street.

3. Ano-Rectal Squamous Cell Carcinoma; Two-stage Excision. Dr. A. Street.

Discussed by Dr. W. H. Parsons. Dr. Street closed.

4. Fracture of the Femur; Open Reduction and Plating. Dr. J. A. K. Birchett, Jr.

5. Probable Carcinoma of the Pancreas, Complicated by Diabetes Mellitus, Obstruction of the Common Bile Duct, and Jaundice. Dr. J. A. K. Birchett, Jr.

6. Fractures of the Patella. Dr. H. H. Johnson.

Discussed by Drs. G. M. Street and W. H. Scudder. Dr. Johnston closed.

7. Diagnostic Clinic by the Society. Lead by Dr. G. M. Street.

8. Clinico-Pathological Conference. Drs. L. J. Clark and L. S. Lippincott.

The two last presentations received general discussion.

This is the second clinical meeting held by the Society this year the first having been held at the Vicksburg Hospital when the members of the Society were the guests of the staff of that institution. Both have been most enjoyable and it is hoped that more such meetings may be held.

Dr. R. H. Foster of Mound, La., was a guest of the Society.

The committee on program for the October meeting was announced as follows: Drs. J. V. May, Port Gibson; J. Pearse O'Leary, Vicksburg; B. T. Orendorf, Rolling Fork; W. H. Parson, Vicksburg; and G. M. Street, Vicksburg.

It has been announced that the subject of the address of Dr. C. C. Bass, of New Orleans, before the Issaquena-Sharkey-Warren Counties Medical Society, at its annual meeting in December, will be "A Discussion of Some of the Newer Remedies and Methods of Treatment for Malaria."

BOOK REVIEWS

Gastro-Intestinal Diseases: Lectures Delivered at the James Mackenzie Institute for Clinical Research, St. Andrews: Edited by Professor David Waterson, M. A., M. D., F. R. C. S. (Edin.), London, Oxford University, 1928. pp. 278.

This work is the collection of a series of lectures delivered at the above institute during the winter session, 1927. Each address is by a specialist and deals with the relationship of gastro-intestinal conditions to his particular field. Though delivered to a staff of research workers, the impression is not to be gained that the addresses are purely of academic interest, but, since they were given by some of the outstanding medical men of England, they are necessarily of interest to all. Numerous case reports are included and free use has been made of hospital records with conclusions drawn from the observations of large number of cases.

Of especial significance is the address, "Ocular Manifestations of Gastro-intestinal Disorders," by A. Maitland Ramsay, as doubtless few recognize pathologic lesions of the eye as an index to the state of the gastro-intestinal tract. As examples, cases are cited of decayed and tender teeth resulting in phlyctenular conjunctivitis, pyorrhea causing toxic iritis, dental caries causing unilateral dilatation of the pupil, paralysis or spasm of accommodation and varying degrees of amblyopia. Likewise it is pointed out that disturbed metabolic states may give rise to toxic amblyopia, chronic constipation to intra-ocular hemorrhage, and hemorrhage from the gastro-intestinal tract to atrophy of the optic nerve. Though some of the conditions touched on are rarely seen, they are certainly worthy of recollection as in most instances quite gratifying therapeutic results are obtained with proper management.

In "Some Surgical Aspects of Gastric and Duodenal Ulcer," by Archibald Young, several series of cases are reviewed with particular stress being made on long time follow-up records. The author divides peptic ulcers into gastric, duodenal and pyloro-duodenal, their percentages being 11.68, 26.6 and 56.4, respectively. As to sex incidence, it was almost identical in gastric ulcer, duodenal ulcer in the proportion of 37 males to 4 females, and pyloro-duodenal ulcer in the proportion of 75 males to 12 females. Tables of age incidence are presented also.

As to operative procedure Young concludes that in gastric ulcer, particularly those along the lesser curvature, partial gastrectomy with posterior gastro-jejunostomy is to be employed, while in the other two groups a simple posterior gastro-

jejunostomy is sufficient. He criticizes rather severely the practice of doing a partial gastrectomy in an effort to get rid of a portion of the acid secreting glands. It is pointed out that these same conclusions were arrived at by Balfour in 1925 at the Mayo Clinic in a review of 1,000 cases of chronic duodenal ulcer treated by gastro-jejunostomy alone.

There are nine other addresses by such men as Fraser, Cheatle and Wilkie, individual consideration of which space does not permit, though they are no less interesting than the above.

J. C. BARTON, M. D.

L'Anesthésie Loco-Regionale en Oto-Rhino-Laryngologie: By Georges Portmann and Paul Leduc. Paris, Gaston Doin, 1928. Illus. pp. 531.

Even the neophytes in surgery flatter themselves that they understand, and properly apply, the art of local anesthesia, which is too often vocal, and not enough local. In oto-laryngology, as in other fields, there is too much blind, groping, needle punctures, and haphazard applying of solutions, with the most feeble, if any, anesthesia.

We can be chastened, and positively enlightened, by Portmann-Leduc's highly practical presentation of this subject. The work is an expression of the authors' twelve years experience with methods of anesthetizing which have proven successful in their hands.

The international reputation of Portmann gives this contribution trustworthiness, and adds a touch of some originality, the latter being a rare feature in this age of superabundant book-writing.

Regional anatomy illustrated with a profusion of original drawing stamps the work with a distinction all its own. Aside from the admirably written French text, these drawings, while largely diagrammatic, and yet true to anatomic outlines, are replete with solid information. These pictures have an intrinsic value—and they are worthy of careful study.

The refinements in technic are more amply covered than in any other work. Nothing is omitted. From broadly gauged chapters on "General Considerations;" from the selection of needle points, adaptable to various steps in anesthetizing; from the position of one's fingers, hands and instruments; from minute descriptions of nerve-structures which innervate the area to be rendered painless, we are led to the finality in technic of where and how to make the injections.

With all this wealth of detail the objective is never lost sight of, "oeuvre pratique," a practical work.

We enthusiastically endorse the preoperative use of morphia gr. $\frac{1}{4}$, combined with scopolamine gr. 1-150. A state of somnolence results which greatly facilitates the operation both for patient and surgeon.

The subject-matter includes anesthesia by (1) topical measures, (2) infiltration, (3) nerve-blocking. A wealth of practical matter features each of these divisions. As the whole head and neck are so richly supplied with large nerve-trunks, these anatomically well-defined structures readily lend themselves to nerve-blocking. This procedure is rapidly gaining precedence in otolaryngological surgery. The authors tender their large experience in proving the feasibility and superiority of such a method when applied in all of its varied refinements. "Ars longa vita brevis," the art of surgery, with its ramifications, will never cease developing along higher planes of accuracy. Even with the brevity of individual lives, there will always be living a vanguard of idealistic and enthusiastic workers to foster the progress of surgery. Such is our trend of thought inspired by a work such as this from the Clinic of Bordeaux, already made famous by the pioneer achievements of "Professeur Moure." The toga of this Nestor in oto-laryngology bids fair to be worn by Portmann himself. Without pouring the unction of flattery, may we indulge in the prophetic vision that he will prove a worthy successor to Moure.

HOMER DUPUY, M. D.

The Nose, Throat and Ear and Their Diseases:

By Chevalier Jackson, M. D., Sc. D., LL. D., F. A. C. S., and George Morrison Coates, A. B., M. D., F. A. C. S., assisted by Chevalier L. Jackson, A. B., M. D. Philadelphia, W. B. Saunders Co. 1929.

This book represents the tremendous task of collaborating the writings of seventy-four separate contributors. The reviewer felt so strongly that the old adage, "Too many cooks spoil the broth," might apply as well to medical writings, that he approached the work of review with distinct prejudice. The prejudice was ill founded. The editors have accomplished their task so thoroughly that the writings of seventy-four men form a unit that will stand as a masterpiece of medical literature.

The chapter on tests of the vestibular apparatus by Eugene R. Lewis, covering the functional side of the static labyrinth, is noteworthy. Lewis comments on the fact that in 1910 the study of the vestibular apparatus had reached a point at

which further progress could not take place upon the then known anatomical facts. To facilitate progress Barany postulated centers in the cerebellum in more or less direct connection with the vestibular nerve and proceeded to elaborate theories respecting the operation of this complex ear mechanism. Barany made perfectly clear that the gaps thus bridged were only tentatively bridged and only by postulates because nothing else was available. Later, Jones similarly postulated certain tracts to facilitate studies of the vestibular intra cranial connections. Both Barany and Jones have explained in their writings that their postulated tracts were purely hypothetical and could not be proved. Lewis believes them to have been unjustly criticized and believes that the practical value of their constructive theorizing has fully justified itself.

The chapters on obstructive laryngeal dyspnea and on tracheotomy should be read by every physician. Photographs illustrate a little patient showing the marked inspiratory tirage in a losing struggle to obtain sufficient air. Another illustration shows the little patient asleep on the operating table after tracheotomy. The accompanying text is most graphically descriptive and well written.

The sections on bronchoscopy and esophagoscopy are covered largely by Chevalier Jackson and his associates. Anatomy and anomalies of the esophagus, cardiospasm and retropharyngeal diverticulum are covered by Harris P. Mosher.

One gets a rather unusual viewpoint of the subject of tonsillectomy from the late Thomas Rushmore French who advocates what he calls expanded tonsillectomy which includes enucleation of the faucial tonsil, the pharyngeal branch and the lingual branch. He, however, does not advocate extensive stripping of the lymphoid tissue from the base of the tongue.

The section on the nose, paranasal sinuses and ear make an extremely practical reference source for the specialist.

H. KEARNEY, M. D.

Collected Papers of the Mayo Clinic and the Mayo Foundation: Ed. by Mrs. M. H. Mellish, Richard Hewitt, M. D., and Mildred A. Felker. Philadelphia, W. B. Saunders Company. 1929. pp. 1197.

The twentieth volume of the Collected Papers of the Mayo Clinic follows somewhat the same form as previous years; that is to say, what are considered the most important presentations are published in detail, whereas those articles which are of general interest are abridged, a somewhat larger number are abstracted and 233

publications, obviously because they were not considered to be of general interest, are not published. Of the total, then, of 490 papers considered in the volume, 81 are printed in toto, 43 are printed in part, 72 abstracted, and references are given to the remaining 233.

It is obviously impossible to enter into a detailed discussion of the material in this volume. Practically every medical subject under the sun is discussed, from how medical education should be conducted to the treatment by cauterization of cystic cervicitis. The volume, because of the catholicity of its contents, should be of considerable value to any reader of the medical sciences. Even to the lay reader the miscellaneous essays would prove, to a certain extent at least, not only interesting but also most instructive.

J. H. MUSSER, M. D.

Operative Surgery: By J. Shelton Horsley, M. D., F. A. C. S. Third edition. St. Louis. C. V. Mosby Company. 1928. pp. 893.

The author has brought the contents of his book up to recent ideas and thoughts on operative surgery. I have not yet come across a one volume book on operative surgery that gives as complete and concise discussion of the subject presented. Necessary and important operations are briefly and very adequately described. Illustrations are quite abundants and very helpful. They add materially and make this volume that much more valuable. This book is one well worth reading.

FRANK L. LORIA, M. D.

Acute Infectious Diseases: By Jay Frank Schamberg, A. B., M. D., and John A. Kolmer, M. D., Dr. P. H., D. Sc., M. Sc., LL. D. Second edition, thoroughly revised. Philadelphia, Lea & Febiger. 1928. pp. 888.

This second edition has undergone a complete revision to meet the modern trend of infectious diseases.

The prevention of diphtheria, treatment of erysipelas, scarletina, Vincent's angina, serum anaphylaxis, mumps, whooping cough, cerebro-spinal meningitis, the "fourth disease" and enythemata infectiosum have been added.

The chapter on vaccination covers every phase of the procedure. Examples are given of patients exposed and unprotected contrasted with protected controls. These pictures would give the anti-vaccinationist little defense.

The chapters on small pox, measles, erysipelas, scarlet fever are very complete, like-wise the treatise of cerebro-spinal meningitis.

Drs. Shamberg and Kolmer have written a very scientific, practical, valuable book. One which so completely instructs the reader that he is impressed with its simplicity, perfection and value. No one in medicine or its specialties is isolated from the occasional case of infectious disease, for concise, authentic, well arranged knowledge on the subject, this Second Edition of Infectious Diseases contains the answer.

M. T. VAN STUDDIFORD, M. D.

History of Blockley: Compiled by John Welsh Croskey, M. D., Philadelphia. F. A. Davis Company, 1929. pp. 765.

A very complete compilation of the story of probably the oldest City General Hospital in the country. In addition to the data concerning the hospital and the alms house itself, there is a complete biography of all the deceased medical men who have been attached to Philadelphia General Hospital. The editor deserves a great deal of credit for the excellency of the volume.

J. H. MUSSER, M. D.

PUBLICATIONS RECEIVED.

Paul B. Hoeber, New York: Outline of Preventive Medicine, Prepared under the auspices of The Committee on Public Health Relations, New York Academy of Medicine.

Harvard University Press, Cambridge: Experiments and Observations on the Gastric Juice and the Physiology of Digestion, by William Beaumont, M. D.

Oxford University Press, London and New York: An Introduction to Pharmacology and Therapeutics, by J. A. Guinn, M. D.

P. Blakiston's Son & Co., Philadelphia: Recent Advances in Surgery, by W. Heneage Ogilvie, M. A., M. D., M. Ch. Stone in the Urinary Tract, by H. P. Winsbury White, M. B., Ch. B., Edin.

W. B. Saunders Company, Philadelphia and London: Minor Surgery, by Frederick Christopher, M. D., F. A. C. S.

F. A. Davis Company, Philadelphia: Surgical and Medical Gynecologic Technic, by Thomas H. Cherry, M. D., F. A. C. S. Varicose Veins, by H. O. McPheeters, M. D., F. A. C. S.

The MacMillan Company, New York: Applied Electrocardiography, by Aaron E. Parsonnet, M. D., F. A. C. P., and Albert S. Hyman, A. B., M. D., F. A. C. P. Sterilization for Human Betterment, by E. S. Gosney, B. S., LL. B., and Paul Popenoe, D. Sc.

William Wood and Company, New York: A Study of Masturbation and The Psychosexual Life, by John F. W. Meagher, M. D., F. A. C. P.

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THE PHYSICIAN AND HIS PATIENT: THEIR RECIPROCAL RELATIONS.*

ALTON OCHSNER, M. D.†,

NEW ORLEANS.

The subject which I have chosen to present tonight is one which should be of interest to all of us, both laymen and physicians. Modern medicine, because of specialization and the disappearance of the family physician, has produced a change in the relationship of the physician to his patient. This change, while apparently desirable in some respects, is definitely undesirable in others. Whenever a patient consults a physician, both physician and patient incur certain responsibilities toward each other. While it may seem trite to re-discuss these responsibilities, I feel that, because often they are disregarded, one is justified in reviewing them. Before proceeding to the discussion of these responsibilities, I wish again to emphasize that there are reciprocal responsibilities which should be observed.

At the present time the tendency in medicine is to disregard the practice of the art of medicine and stress only the science of medicine. This is probably due to several factors. Often a patient recovers from a malady for which there is no specific therapy. The recovery occurs as a result

of or in spite of the prescribed treatment. All individuals are human, and the physician, unless critically inclined, is apt to believe that the treatment which was instituted was responsible for the improvement. An attempt is made, therefore, by medical schools to develop the critical attitude in their students, in order that their judgment will not be warped by an incidental or even accidental recovery. The development of medical centers, group medicine, and clinics, with their attendant interest in scientific medicine, are responsible, in part, for the elimination of the art of medicine. The patient is often not considered by the medical attendant as an individual. As emphasized by Peabody,¹ the present day physician is prone to treat a patient as a certain disease and not as an individual. This is exemplified in many schools, hospitals, and even in private practice. Mrs. Jones, who is nervous and complains of palpitation of the heart, is referred to by the student, interne, and physician, not as Mrs. Jones but as an interesting case of exophthalmic goitre. This patient, in addition to having certain changes in her thyroid gland, which are responsible for her symptoms and signs, has had considerable worry at home, due to the illness of children, which has been largely responsible for, or at least has greatly aggravated, her condition. If she is treated as a case of exophthalmic goitre only, the most important part of the treatment may be neglected. An important responsibility of the physician to the patient is, therefore, to treat the patient as an individual and not

*Annual Oration, read before the Mississippi State Medical Association, at Gulfport, May 14-15, 1929.

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merely as a disease. Thus, the psychology of the patient will not be disregarded. The importance of considering the psychology of the patient has been demonstrated by Lawhead,² who found that among 1100 individuals desiring medical care 722 had employed osteopaths, 120 chiropractors, 133 Christian Scientists, and only 125, about 10 per cent, had employed educated, non-sectarian physicians. The reason that 90 per cent of this group of individuals consulted irregular practitioners is because of the medical profession's tendency to treat the patient as a scientific objective and not as an individual.

The first essential in treating any individual who is not well is the establishment of a correct diagnosis. Chaney,³ in discussing the essentials in good surgical practice (which is also as true in other types of practice), divides surgery into four groups. He gives the following percentages denoting the relative importance of each group:

- Surgical diagnosis—50 per cent
- Surgical pathology—25 per cent
- Surgical technic—15 per cent
- Surgical aftercare—10 per cent

"Correct diagnosis depends largely upon the care with which the case history is taken, the thoroughness with which the physical diagnosis is made, and the skill with which the details of the history and physical examination are correlated." (Reginald Fitz)⁴. There is a tendency in practice in establishing a diagnosis, especially if the practitioner be busy, to neglect the most important weapons in his armamentarium, i. e., careful history and thorough physical examination. A careful and complete history often is the most important factor in making a correct diagnosis. A history of long continued indigestion associated with qualitative dyspepsia, inability to eat certain foods, especially greasy foods, associated with an uncomfortable feeling in the abdomen and belching of gas, together with a tenderness over the

liver and gall-bladder, justifies a diagnosis of inflammation of the gallbladder. In this specific established case, as in many others, the history is of utmost importance. The performance of a complete physical examination cannot be over-emphasized, even though the patient complains of an apparently trivial condition. How frequently does a patient with a brain tumor consult an oculist because of failing vision or the same individual consult an ear specialist because of disturbance in hearing. The patient with Bright's disease may also have ocular symptoms. Not infrequently a patient complains of bleeding from the rectum, and his physician, either because of lack of time or because of the patient's timidity, fails to perform a rectal examination. A diagnosis of hemorrhoids is usually made, and the patient is treated for the condition. Even though the most frequent cause is a cancer, and any physician who fails to examine the rectum in such a case is not only not assuming the responsibility which he owes to the patient but is guilty of gross neglect. I have seen four hopelessly inoperable cases of cancer of the rectum which had been treated for varying periods of time by physicians as cases of hemorrhoids without a rectal examination ever having been made.

Whereas a careful history and physical examination are most important in making a correct diagnosis, each patient, when consulting a physician, is also entitled to certain laboratory examinations, especially a examination of the urine and, whenever indicated, other special examinations, such as blood examination, roentgen-ray examinations of the stomach and intestine, chemical examination of the stomach content and many others too numerous to mention. An examination of the urine should be performed in every case, and it is absolutely imperative before a general anesthetic given. The failure to recognize an unsuspected case of diabetes may cause the death of the patient following the administration of an ether anesthetic. The physician

protection to both the patient and himself should insist upon a roentgengram being made in all suspected fractures. Many law suits are prevented by the observance of this rule.

If a condition is found to exist which the physician is unable to treat because of insufficient training in that particular field or if the diagnosis is not clear, he should obtain consultation with other physicians. "Consultation, especially with those who have a reputation of intellectual superiority, lessens responsibility, anxiety, and risks of personal blame." (Cathell)⁵. As it is impossible for any one individual to master the entire science of medicine, specialists, who are individuals who have tried to master one particular field of medicine, have become necessary. I wish to digress at this point merely to state that, whereas specialists are desirable, there are many specialists who do not deserve such a name. Any individual specializing in a particular branch should first spend several years in general training, in order that he may not become too narrow in his specialty. In the event the physician is unable to treat the patient properly, the patient should be referred to the specialist for such treatment, following which the patient returns to the original physician.

The physician owes it to his patient to submit all specimens which are removed surgically to a competent pathologist for examination. Not infrequently evidence of cancer is found even though such a condition was not suspected before operation. According to McCarty⁶, this occurs in 8 per cent of unsuspected lesions removed at the Mayo Clinic. Frequently, the reverse condition is also true. Patients who preoperatively present all the signs and symptoms of cancer can be reassured after operation, because the examination of the tissue removed showed no evidence of malignant disease. Another advantage of pathological examination is the ability in certain cases of malignant tumors to determine whether the tumor is relatively malignant

or relatively benign. Broders⁷ first showed that from the examination of the tissue removed one might predict what the clinical course would be. He has shown that certain cancers, even though they have existed over long periods of time, and have extended relatively far, can be cured completely because of their relative benignancy.

Every patient is entitled to, and many insist upon, having a prognosis. In the case of malignant disease the physician is probably justified in not giving the diagnosis to the patient. He should, however, in justification to the patient and in justice to himself, tell the exact status of his patient's condition to a responsible relative. Under certain conditions it is desirable to tell the patient, in order that he may arrange his business affairs. Care should be exercised, however, in giving the prognosis, as occasionally individuals apparently suffering from hopelessly inoperable cancer recover, without the institution of any particular type of treatment. The diagnosis in this case was fortunately wrong. If, however, the patient had been given a bad prognosis and, as a last resort, had consulted an illegal practitioner, the cure which resulted is credited to chiropractic, Christian Science, or whatnot.

Medical science is continually advancing. Due to an immense amount of research work performed in the various branches of medicine, a definite progress is being made. Because of this, every physician who is engaged in the practice of medicine owes it to his patient to keep informed of the advances in medicine. I do not mean by this that everything which appears in medical journals should be accepted as true. Unfortunately, there is too much written. It is, however, essential that the physician subscribe to one or two standard medical journals and that he familiarize himself with the articles which appear in them. It is also essential that he attend medical meetings, in order that he may not become too provincial and self-satisfied. The contact

with his colleagues at such meetings is not only instructive but also stimulating. The physician who would attempt to treat diabetes at the present time without ever employing insulin or the individual who would treat pernicious anemia without any knowledge of the "liver diet" is not fulfilling his obligation to his patient. Patients, themselves, are often responsible for their physician's not attending medical society meetings. Frequently, a physician will hesitate leaving his patients, as he feels it is an injustice to go away. The patients, in turn, owe it to their physician to permit him to take such leaves of absence, that he may attend clinics or medical meetings, as they are the ones who will profit by such procedures.

Considerable is being written at the present time about the passing of the family physician. This is undoubtedly true, and such a condition is certainly to be regretted, because no one will ever be able to take the place of such an important individual in a community. Patients, themselves, are partly responsible for this. Unfortunately, as the result of specialization, patients will frequently consult a specialist directly without first consulting their family physician. One who is suffering from dimness in vision, often consults an oculist, who may or may not detect that the condition is due to a very severe form of Bright's disease. Every patient should have a family physician to whom he may go in case of any illness. The physician should have charge of the patient's case, and if it becomes necessary to obtain the services of a specialist he, and not the patient, should be the one to decide which specialist should be consulted. It is, however, essential that the specialist should be chosen because of his ability and not because of any personal preference. As emphasized by Leigh⁸, the family physician should keep a life record of the patient, including all illnesses, together with complete findings during and after each illness. When a specialist is consulted conferences between the family

physician and the specialist are not only desirable but imperative. The family physician may supply the specialist with considerable valuable data obtained from the previous record of the patient.

Whenever consulting a physician the patient owes it to the physician, as well as to himself, to give a complete history and permit a thorough physical examination. Frequently, because of false modesty, an individual will refuse to give certain points in the history which may be extremely important. This same individual may also refuse to allow a complete physical examination. In such a case the physician should refuse to assume the responsibility of the case. An obligation which the patient owes himself really more than the physician is the consultation with his physician at certain repeated intervals for complete physical examination. In this way, often unsuspected lesions are found. A woman who has been unconscious of any lesion may consult her physician for periodic health examination. He finds a lump in the breast, which is an early stage of cancer. The cancer which is discovered early is curable by surgical removal. In fact, the present day treatment of cancer consists of early diagnosis of the lesion and complete eradication of the focus. The value of periodic health examination cannot be over emphasized.

Another obligation which the patient owes to his physician is the prompt payment of the physician's bills. Probably due to the laxity of members of the medical profession themselves, because medicine, with its high ideals, is not commercial, the general tendency is to postpone the payment of the physician's bill until all other bills are paid. Not infrequently, the physician when asked what his fee is dismisses the subject at the time by saying: "Oh, never mind about that now." Unfortunately, many physicians have gotten the idea that the question of fees should never be discussed with the patient, as it might lower the standards of the medical profes-

sion. A patient occasionally objects to the fee which the physician charges because of the comparatively short time which was spent with the patient. One must not forget, however, that many years have been spent equipping that particular physician so that he is able to care for his patient. At the present time, the minimal training required is six years. Practically no physicians, however, are content without spending at least one to two years in a hospital after the completion of the medical school training. Anyone desiring to go into a specialty must spend an additional four or five years in the special training. The patient who objects to a \$10.00 fee should remember that the opinion given is made possible only through the expenditure of large sums of money as well as many years of training and experience.

The physician is subject to beck and call day and night, and when needed is always ready to go. How frequently is he called out at night unnecessarily to see a young child who has been sick for several days without any apparent improvement. As the child is unable to sleep, the doctor is called without regard for his rest.

Whenever possible all consultations should be made in the physician's office, because at his office it is possible for him to make the best examination with the least amount of effort. In this way his energy is saved, and the patient receives more benefit. Except in cases of absolute necessity the physician should not be called on holidays and Sundays, because he, as other human beings, is entitled to periods of rest. If he is able to obtain this rest he is more efficient, and is able to serve his patient better than otherwise. Please do not construe from these remarks that I wish to intimate that he should not be called on holidays or during the night. No one should hesitate to obtain the services of a physician whenever such are necessary. Very

frequently, however, the physician is called at very inopportune times for conditions which are not urgent, which have been existent for hours, or even days, and which are not progressive. In so disregarding the physician's welfare, the patient disregards one of the important responsibilities which he owes his physician.

It is imperative that a patient have absolute confidence in his physician. If such confidence is not present it is far better for the patient to consult another physician, as the treatment of the mind of the patient is often as important as the treatment of the physical derangement.

I hope that in this short presentation I have been able to convey to you the various responsibilities which the patient and the physician owe to each other. If both the physician and the patient are to obtain the maximum results, these responsibilities must be observed. Without the observance of these responsibilities, the physician's efforts will be more or less fruitless, with the result that the patient will not obtain the maximum benefit. Whenever the physician undertakes the care of a patient, great are both their obligations.

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THE STATE ASSOCIATION AND THE PUBLIC HEALTH PROGRAM.*

C. C. APPLEWHITE, M. D.

JACKSON, MISS.

The status of the public health program in Mississippi today is due largely to the foresight, vision, and zeal of the members of the State Medical Association. The progress which has been made in the field of public health must justly be credited to this Association, likewise the shortcomings and failures in the public health movement must be charged to the same source. The State Board of Health is the child of this Association since all of the members of that Board, with one exception, are members of, and were nominated by this Association. The majority of the members of the Central Staff, selected by this Board of your own choosing, and the medical field staff are members in good standing of this Association. Thus, it can be readily seen that this Association, in return for the privilege accorded it by law of selecting the members of the State Board of Health, has taken unto itself the grave responsibility of promoting and leading in the matter of protecting the public health. Public health progress can not and should not outstrip the wishes of this Association. Fortunately for this state the medical profession has always lead constructively in the field of public health. So long as this constructive leadership is maintained by the profession, the general public will gladly follow. This Association, therefore, should be keenly interested in, and thoroughly conversant with, the successes and failures of this, its child. It is deemed proper and expedient at this time to give a brief outline of some of the recent public health accomplishments.

During the past few years the State Board of Health has enthusiastically stress-

ed the establishment of permanent full time county health departments. The experiences of not only the State Boards of Health of the various states, but also of the Rockefeller Foundation and the United States Public Health Service, have thoroughly demonstrated that the public health can be more adequately and economically conserved through this agency than by any other method. In this state, phenomenal progress has been made in the creation and maintenance of full time county health departments. At present twenty-nine out of the eighty-two counties, embracing 48 percent of the total population, have reasonably adequate local health service. That this work is being placed upon a permanent basis is revealed by the fact that no county has discontinued full time health service since 1924. It is indeed a pleasure to report that the local medical profession should share largely in the credit for this worthwhile accomplishment. In several of the counties in which full time work was recently inaugurated members of the local medical profession sponsored the movement and were directly responsible for the local contributing agencies making an adequate appropriation for local health service. Since the State Board of Health has seen fit to lay particular stress upon this phase of work, it is deemed fitting at this time to outline briefly some of the chief activities of a full time county health department.

EDUCATION

In executing a satisfactory public health program the education of the masses is the sheet anchor of public health workers. It is the duty of the local health department to teach the people by public lectures, newspaper articles, conferences (both public and personal), and by all other known means of disseminating knowledge, the sources of infection, the modes of transmission, and the common sense methods of prevention of the acute infectious diseases. The main purpose of such an educational campaign is to acquaint the general public with the scientific public

*Chairman's Address, read before the Section on Hygiene and Public Health, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

health facts which the medical profession has had in its possession for the past quarter of a century. To acquaint the people with these facts in such manner as to get them to make practical application of this information is one of the main functions of full time health workers. The full time health department is in reality a liaison agent between the general public and the medical profession.

CONTROL OF COMMUNICABLE DISEASES.

A health department that functions properly will reduce the incidence of communicable diseases. This is brought about by securing more promptly accurate reports from the medical profession. The full time health worker gives the medical profession something in return for the reports received. The moment a physician reports a case of communicable disease to the (full time) health department he shifts the responsibility for the spread of infection from that case from his shoulders to that of the health department. It is the duty of the full time health department to visit the cases of communicable diseases reported by the physicians for the purpose of giving the attendants the necessary instructions relative to bedside precautions, of isolating the cases, and of quarantining the contacts. The treatment of the case in question is left with the family physician. If the disease happens to be one for which there is an immunizing agent, it is the duty of the health department to administer this agent to all contacts. The health department administers typhoid vaccine, smallpox vaccine, toxin-antitoxin, and performs the Schick test free of charge to any of the citizens of the county under its jurisdiction. During the year 1928 the full time health departments gave 136,000 doses of typhoid vaccine, 67,000 doses of toxin-antitoxin, and vaccinated approximately 40,000 people against smallpox.

CHILD WELFARE.

It is the duty of the county health department to make medical examinations of pre-school and school children for the purpose

of detecting any physical defects which are likely to interfere with the mental and physical growth of these children. All defects thus found are reported to the child's parent or guardian with the request that the child be carried to the family physician for such corrective work. It is the function of the health department, in whatever way possible, to get these children into the hands of the medical profession. The correction of these physical defects is a responsibility that devolves upon the local practitioners of medicine and is in no way a public health function. During the year 1928 approximately 90,000 school children and pre-school children were given the regular physical examination and the necessary followup work was done for the purpose of inducing corrective work. The question naturally arises, is this work worthwhile? The answer to that question is that during the year 1928 approximately 24,000 corrections of physical defects were reported by the various health departments. No doubt more corrections were effected than were reported since at present the system of ascertaining the number of corrections made is somewhat inadequate.

ENVIRONMENTAL SANITATION.

A full time health department that functions properly must see to it that the people under its jurisdiction reside in an environment that is as nearly free from health hazards as it is possible to make it. The full time health department sees to it that the public water and milk supplies are properly safeguarded and offers advice and information relative to private water supplies. The results of the various health department's supervision of the public milk supply is that there has not only been an improvement in the quality of milk supplied the people, but a marked increase in the quantity. It is the duty of the local health department to inspect all food vending establishments to see that they comply with the rules of modern sanitary practices. Of all the factors which are likely to have a definite bearing upon the health

of a community, the proper disposition of human waste matter is probably the most important. It is a routine procedure for the local health departments to give special attention to this problem. The sanitation of homes in thickly populated sections and or rural school premises is given first consideration. During the year 1928 radical changes in the method of disposing of human excreta were effected at 19,765 places in the organized counties.

This is but a brief resume of the major activities of a full time county health department. Time and your patience will not permit of a more detailed discussion.

What then, if any, are the results which have been accomplished by this full time local health service? The Bureau of Communicable Diseases collects, tabulates, and makes ready for use data relative to the incidence of and deaths from the more common communicable diseases. During the year 1927, 97 per cent of the physicians reported on clinical report cards the cases

of typhoid fever, diphtheria, scarlet fever, and smallpox seen by them. The records of deaths are in all probability more accurate than are the morbidity reports. However, the following comparative tables are very significant and show rather strikingly the effect full time local health service has had on the incidence of and the death rates from these diseases. The following facts should be taken into consideration when analyzing these statistics:

First, approximately 54 per cent of the population of the full time counties is black while in the part time counties the rates between white and black are approximately 50-50.

Second, as a general rule the larger centers of population are in the full time counties, hence there is encountered greater congestion of population which in turn favors more ready transfer of infection.

Third, the full time health departments probably secure more uniformly accurate morbidity reports from the physicians.

Case Rates and Death Rates per 100,000 population in the Full Time and Part Time Counties during the year 1927.

Total pop. in Full Time Counties—601,435		Total pop. in Part Time Counties—1,189,183		
—CASE RATES—		—DEATH RATES—		
	Full Time	Part Time	Full Time	Part Time
Diphtheria	72.21	100.38	8.13	10.75
Scarlet Fever	52.95	58.71	.66	1.00
Typhoid Fever.....	83.	92.14	10.12	16.29
Smallpox	8.63	26.54	.16	.25
Tuberculosis	222.77	182.70	87.31	104.66

Case Rates and Death Rates per 100,000 population in the white race in the Full Time and Part Time Counties during the year 1927.

Total white pop. Full Time Counties—277,975		Total white pop. Part Time Counties—575,987		
—CASE RATES—		—DEATH RATES—		
	Full Time	Part Time	Full Time	Part Time
Diphtheria	110.21	157.94	9.69	14.35
Scarlet Fever.....	104.11	113.14	1.43	2.07
Typhoid Fever	60.31	97.74	5.38	8.99
Smallpox	8.97	24.04	0	0
Tuberculosis	179.14	158.12	31.23	48.78

Case Rates and Death Rates per 100,000 population in the colored race in Full Time and Part Time Counties during the year 1927.

Total colored pop. in Full Time Cos.—323,460		Total Colored pop. in Part Time Cos.—613,196		
—CASE RATES—		—DEATH RATES—		
	Full Time	Part Time	Full Time	Part Time
Diphtheria	39.55	45.96	6.79	7.33
Scarlet Fever	8.65	7.33	0	0
Typhoid Fever	102.58	86.71	14.21	23.14
Smallpox	8.34	28.85	.30	.48
Tuberculosis	260.48	205.54	135.65	157.13

It can readily be seen from these tables that the death rates from these particular diseases are considerably higher in the part time counties than in the full time counties. The case rates are uniformly much lower in the full time counties than in the part time counties except that for tuberculosis. In many of the full time counties a county-wide tuberculosis survey has been made and this factor would have a tendency to elevate the case rate for this disease. The tuberculosis death rates would tend to indicate that either there have been more cases of tuberculosis in the part time counties than were reported or that the therapeutic measures used in the part time counties were not as efficacious as those used in the full time counties. Attention is called to the case rates of typhoid fever in the negro race. The case rate per 100,000 population was 102.58 in the full time counties, and 86.71 in the part time counties. The death rates were 14.21 and 23.14 per 100,000 population in the full time and part time counties respectively. These figures would indicate that either the doctors in the part time counties are not seeing as large a percentage of the cases of typhoid fever among the negroes or they are not treating the disease as successfully as their fellow practitioners in the full time counties. Data in the Bureau of Communicable Diseases indicate that the physicians in the full time counties are seeing 75 per cent of the case of typhoid fever occurring among the negroes while the physicians in the part time counties are seeing about 37 per cent of the cases among that race. Apparently the full time health departments have been to some extent instrumental in getting these cases into the hands of the general practitioner of medicine. With these brief explanations these tables will be allowed to speak for themselves.

From the foregoing facts it is felt that it is only reasonable to conclude that the

State Board of Health is pursuing the right course in its enthusiastic advocacy of full time local health service. However, lest this association should assume a self-satisfied attitude towards these recent accomplishment of the Board of Health and develop a feeling of complacency, attention is called to the fact that 52 per cent of the people of this state are not now enjoying the advantages of reasonably adequate local health service. Mention is here made of the fact that the negroes in the full time counties are provided with better health protection than are the white people in the part time counties. There are at least one-half million school children in this state who will need next year the regular medical examination, many thousands of whom have devitalizing handicaps which the skill of the members of this Association could and would relieve if the opportunity were afforded. At least one hundred thousand of these children should have toxin-anti-toxin to protect them against diphtheria. The fifty thousand babies born last year should have this protective agent administered this year. The use of the open back privy is entirely too common in this state for the physical comfort and well being of the general public. The venereal disease problem demands the best thought and most serious consideration of the medical profession if the enormous wastage of human life and efficiency is to be stopped. Last year more than 5500 people died in this state from the so-called degenerative diseases. In dealing with this class of diseases the medical profession is afforded a wonderful opportunity for service. In fact the mere surface of the public health problems in this state is at present being scratched. The lay people of this state are looking to the medical profession for constructive leadership in the solution of all of these intricate problems. Certainly the members of this Association can be de-

pended upon to be true to the trust reposed in them by the lay public and to remain loyal to the ideals and principles of those pioneers of the profession who so effectively blazed the public health trail in this state.

DISCUSSION.

Dr. D. J. Williams, (Gulfport): It has not been customary to discuss the Chairman's address, but I felt that in the presentation of this paper Dr. Applewhite has outrun himself. Since I have known you, sir, I have not known you to present a more excellent piece of work, and I am going to deviate from the usual run of the Association and permit the members here to make a few comments if they see fit.

In doing so, you are not to take issue with the Doctor whose word is final in this instance. I don't want to create any embarrassment by your being slow, but the Doctor has brought out one point particularly and I think it is well emphasized. He referred particularly to the skill of the physicians in the counties in which there are all-time health departments.

I want to say to the doctors in the state of Mississippi that I believe no single factor has been so instrumental in making better doctors of Mississippi doctors than has the all-time health department. I have made this statement before, but I am particularly pleased to repeat it. I believe the standard of medicine in Harrison County within the five years of the all-time health department has been raised not less than thirty-three and one-third per cent. In the fifteen years that we have been operating here, I am confident that the standard of medicine has been increased one hundred per cent, and I don't know where the end will come. I don't believe there is anything that has added to the decreased death rates more than the effective reporting of cases and the effective, sensible treatment that has been administered by the doctors of our county. I believe that will go far toward curing many of the ills that are complained of, and particularly those who feel that some legislation should be passed regulating osteopathy, chiropractics, and God knows what all. If you render the proper service, put it within the reach of the people, then we will succeed and not be so much concerned about the irregular practitioners.

CHANCRE.*

JOHN G. PRATT, M. D.,

NEW ORLEANS.

In choosing the title of this paper I did it with the idea of first, narrowing the field of syphilis to one stage of the disease; second, to call attention to the fact that it is in this stage that the disease can be easily diagnosed, and third, that early diagnosis means that the treatment is much shorter and more efficacious.

As you all know, the disease is an old malady dating back to the return of Columbus following his discovery of this continent. Much has been written about the disease and many fine descriptions have been given us of the various clinical manifestations of the disease by the older clinicians. To my way of thinking there is no more complete clinical description of the disease than that which was written by Hutchinson.

In this little book he described with minute details the various types of chancre. Anyone reading his description could easily diagnose the chancre, but unfortunately there would be a great loss of time in waiting for the sore to take on its particular chancre characteristics. There are also many sores which do not run true to type. Some are very atypical and, from a clinical standpoint, would never be diagnosed as the initial lesion of syphilis. This, of course, would mean that a great many lesions would be dismissed, and that the diagnosis of syphilis would have to be made on the later symptoms of the disease.

The typical chancres which Keyes, in his book on syphilis, classified into three classes are: first, the eroded chancre, the color of which is that of raw meat with little petechial spots, the surface is usually flat, the induration is circumscribed rounded and thin and very slightly raised above the surface of the integument. It is a fairly

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

clean looking sore and emits a slight sero-purulent discharge. Second, the ulcerated chancre or Hunterian chancre is one in which the sore is elevated, the induration is marked and surmounting the induration is a distinct ulceration which is more or less necrotic in appearance due to actual necrosis of the inner part of the chancre. The surface of the ulcer is dirty grayish in color and one can see tissue which is sloughing. When this is scraped away the under surface bleeds quite easily. The indurated papule is Keyes' third type of chancre. It is much rarer than the other two types and occurs where the integument is dense and thick. The induration therefore remains small, of a dark red color and looks like a papule usually covered by a scab. The lesion resembles that of scabies.

There is another type of chancre which is classified by some authors as the parchment chancre. I personally have seen only three or four of this type and all of them have been on negroes, and all have been on the shaft of the penis or on the scrotum. They are usually large, ranging in size of a five cent piece to larger than a quarter, are very clean in appearance with absolutely no ulceration or erosion, very little, if any exudate and when felt between the fingers give one the impression of being of the texture of parchment. The surface of this lesion is absolutely glistening in appearance. Of late there has come into this list the so-called button chancre which I believe is nothing but the Hunterian chancre. It usually occurs on the shaft of the penis or on the scrotum. The induration is most marked as compared to the small ulcerated area at its dome and on its healing leaves a marked induration of the tissue which feels like a button under the skin.

The time which it takes a chancre to develop its characteristics varies from one week to three weeks. They all begin alike as a very small red area which soon loses its superficial skin and looks for all the world like the skin had been brushed off

with a piece of fine emery cloth leaving a more or less clean brush burn.

It is common to hear a patient tell you that they just thought that their clothes had rubbed the skin off so they paid no attention to it or that they had been subject to herpes and that they thought that it was just another crop. I have seen patients who have told me that they went to the doctor who said it was nothing but herpes and touched the sore with silver nitrate. So in the very earliest stages the sore is most innocent in appearance and may easily mislead one into medicating it and destroying an early means of making a diagnosis.

Chancres may be multiple as well as single. The mere fact that there is more than one sore present does not preclude that the case is one of syphilis. I have seen a man with as many as 19 sores on his penis and scrotum, six of which I scraped at various places and found them loaded with spirochetes, and, according to the story of the patient, these sores all appeared within three or four days of each other and that there had only been one exposure and that one was the very first time in life that he had ever had an intercourse. It is fairly common to see two or three initial lesions but I must say that the single chancre is by far the most common.

The location of the chancre can be on any part of the body as well as on the genitals. It must be remembered that the chancre appears at the point at which the inoculation takes place. We see them, not only on the penis, but on the scrotum, in the suprapubic area, on the abdominal wall, on the thighs, on the buttocks, around the anus, on the lips, tongue, tonsils, on the cheeks and on the neck, even the nose and eyebrows.

Within our profession there are quite a number of digital infections, and if I may pause here to state I have seen about eight of these cases, which have gone without diagnosis until the secondary manifesta-

tions of this disease made their appearance. It is a rather poor commentary on the profession when a man will watch a digital sore grow and grow and keep medicating it with salve, lotions and what not and never suspect that it is syphilis until it breaks out in a full secondaries. It seems to me that in the practice of medicine we are all exposed at times, to inoculation by this disease, that the moment a digital sore appears on our hands, we should become immediately suspicious of syphilis and would have it scraped to rule out this malady.

The incubation period of the initial sore of syphilis varies considerably and I would place it between 10 days and three months, the average being about twenty-eight days. I have seen both of the limits which I mentioned. There is also a group in which no definite incubation period can be ascertained, that is, those who are being exposed two or three times a week.

Now what happens to the patient between the time of inoculation and the time the chancre makes its appearance? Surely these most motile spirochetes do not remain only at the site of inoculation. They make their way into the lymphatics and are eventually carried to the blood streams and are borne to every part of the body. This fact was proven by Neisser, in his experiments in Java, on the chimpanzee. He definitely proved that in about ten days after the animals were inoculated, that the spirochetes could be definitely proven in every organ of the body. So we see from this that long before the average chancre makes its appearance that the disease is already a systematic one. We might now ask ourselves why it is that there is not a more rapid reaction on the part of the host to the invasion, all I can say is that the disease is one of great chronicity and that the reaction comes very slowly. This is manifested by the usual duration of the sore of from four to six weeks. I may here state that the sero reaction is very slow and that the Wassermann reaction very

rarely becomes positive before the third week and quite often is not positive until the sixth week of the chancre.

From the above facts, I wish to emphasize that the early diagnosis of a chancre or syphilis cannot be made on the incubation period, the clinical aspects of the sore or on the serum reaction of the blood so that we have to resort to the microscope using the dark field or the india ink or one of the more complicated staining reactions to find the spirochetes in the sore. For my part, I prefer the darkfield first and then the indian ink methods. Dr. Hume and I ran for several years the indian ink and the dark fields methods and at the end of this time there was only about a 2 per cent deficiency on the part of the india ink method.

In the very early chancres, spirochetes can be demonstrated with the greatest of ease but as they become older there is a decided diminution of the number of organism present, also a sore that has been medicated contains very few and in large number of cases no organisms can be demonstrated. Therefore, I may state that as soon as a case presents itself with a sore, that the sore should be scraped and a determined effort made to demonstrate the spirochetes in the scrapings before any medication is applied to the lesion. Should the sore have been medicated before it is presented, then several scrapings should be made at intervals to determine whether or not the case is syphilis. In other words, every effort ought to be made either to prove or disprove it to be a chancre. Once a sore is proven not to be syphilis, then local applications are in order. Should it be proven to be a chancre, then systematic treatment for syphilis will care for the local lesion.

For practical purposes of treatment we may divide the chancre stage of syphilis into two divisions: the sero-negative period and the sero-positive period. The sero-negative period, to make it sharply defined for practical reasons, is that period from

the first appearance of the sore to the end of the third week when the Wassermann becomes positive. Of course, this period varies both over and under the third week, but I choose the third week because it fits the average case. The sero-positive stage is that period after the third week or after the Wassermann becomes positive. Again, for practical reason, we may divide the sero-negative stage into the first ten days and the second ten day period. I firmly believe that if a chancre is diagnosed in the first ten day period and treatment instituted at once, that the treatment necessary to bring about a complete and early cure will be shorter than that needed in the second ten day period. So it behooves us to make the diagnosis as early in the disease as possible. The earlier the treatment is started the shorter will be the course of treatment, the surer the cure and the less will be the financial strain upon the patient.

When salvarsan was first brought out by Erlich in 1911, it was thought that one injection of the drug would cure any case of syphilis. It was in this period that one or two cases were treated at our office for a very early chancre, one or two days old, and later when it was discovered that a cure was not obtained by one injection these patients were sent for and kept under observation for several years watching for clinical and serological symptoms of the disease. Neither of them ever showed positive in any way whatever. I do not mean to advocate only one injection of the arsenicals as a cure in all cases of early chancre, but I believe that a six to ten months course of treatment will handle the great majority of the chancres in the first ten day period. A year to sixteen months should handle those in the second ten day period.

In the sero-positive stages of the disease anywhere from eighteen months to five years of treatment would be necessary.

In my final plea for the early diagnosis and treatment of the chancre, I wish to

state that in private practice the number of patients that stick to treatment until they are discharged as cured by the doctor amounts to about 15 per cent, and in charity practice about 2 per cent. It might be noteworthy to state here that up until 1917 that twenty-nine physicians were seen with syphilis in our office and out of these twenty-nine case that only two cases were discharged as cured, the others quit.

I wish also to impress upon you that we must try to make the patient understand that a most innocent appearing sore, which contains the spirochetes, is syphilis and that he must be treated over a length of time or suffer at some later date, the consequences.

A very eminent neurologist told me the other day that those cases which disappeared from the doctors care were potentially his bread and meat.

In conclusion, I wish to summarize the salient facts:

1. The earliest and surest way of diagnosing a chancre is by the use of the microscope, otherwise valuable time will be lost in instituting treatment.

2. All lesions on the genitals should be considered possible chancres until proved otherwise.

3. Lesions which have been previously medicated should be scraped and re-scraped until there is no doubt of the diagnosis.

4. Early and adequate treatment of chancre means early cure of syphilis.

5. The most important stage of syphilis from the patient's standpoint is the chancre.

DISCUSSION.

Dr. Gordon (New Orleans): I want to emphasize as strongly as I can the point which Dr. Pratt made, that nobody can look at any sore on or around the genitals and tell anything at all about it. Dr. Johns, who does my dark field work, will bear me out that I send him everything from herpes to staphylococcus infections of the penis. I scrape promptly any and

all sores around the genitals. I differ with Dr. Pratt in the amount of treatment that will cure syphilis. I don't think any patient should receive only a year's treatment. I treat all the cases I can keep my hands on for two to three years, and do not discharge them before that time. The type of treatment, I do not propose to consider, but I think that we should have at least two years of negative blood Wassermans and that the spinal fluid should be negative for a year or over. Let me say again that if you follow the plan of scraping every sore around the penis, you will do a great deal of good for mankind.

Dr. Foster M. Johns (New Orleans): I want to make a few remarks on this question from the standpoint of the laboratory. Even in this year, 1929, I am frank to admit that fully 30 per cent of the cases sent to me for examination have been treated for from one to three weeks before I see them. My own opinion is that it is criminal negligence for any man to treat any sore on the exposed area anywhere in the body without making a definite diagnosis of it. The only time that we can make definite diagnosis of syphilis is in the chancre stage, for it is only then that we can see the spirochetes. I repeat, therefore, that in this day and time it is criminal negligence to treat any sore without making the proper diagnosis first.

My experience with extra-genital is somewhat more striking than Dr. Pratt's, for I have seen about sixty in doctors, dentists, nurses and other individuals. Among them there are cases which have been treated for from one to six months without any suspicion of syphilis. I would extend his requirement of the laboratory examination of sores about the genitals to all chronic sores. In no other way can we be certain of our diagnosis. It is folly to wait for the secondaries to appear; they do not always appear. Just within the last week I made a spinal puncture on a prominent physician who had a venereal infection forty years ago. Nothing else happened until tubercles appeared. I would say again that any kind of long-standing, indurated sore, any sore which does not heal promptly, should be submitted to laboratory examination, for in no other way can syphilis either be diagnosed or be eliminated.

Dr. H. J. Lindner (New Orleans): Dr. Pratt has chosen to discuss for us a very small but a very important term. The accurate and early diagnosis of syphilis cannot be too strongly stressed. The average general practitioner cannot appreciate this point as we do, who have seen these unfortunate individuals come and go in the clinics of Charity Hospital. All venereal or genital sores should be scraped, and should be scraped repeatedly, for a single examination

may fail to reveal the spirochete because of previous treatment or because of faulty technique. We follow this plan in our clinic and we teach it to our students, indeed, we train them to make their examinations sometimes several times a week, and to continue them for several weeks when necessary to reach a diagnosis. A supposedly venereal lesion should never be treated until there is some definite conclusion as to the diagnosis. As Dr. Pratt and I were both brought up in the school of Dr. Hume, we are in accord on most points, but I rather disagree with his as to treatment. I have been associated with the urological clinic at Charity Hospital for the last sixteen years, and I have seen many patients come and go and come back to us. My experience there has taught me many things, and has given me at least one rule for my office practice, not to discontinue treatment for at least eighteen months, no matter how early a diagnosis was made. Indeed, if I ever had the misfortune to be infected myself, I should be unwilling to discontinue treatment for at least three years, no matter how early the diagnosis was made. Early diagnosis and early intensive and continued treatment are the only solutions in the problem of the treatment of syphilis.

Dr. A. Mattes (New Orleans): This subject is one which to my mind occupies a very important position on our program. The essayist has called to our attention the danger we are in of the actual syphilization of the human race. If the specialists of our profession as well as the general practitioners were not so negligent in this matter, we would see less syphilis, the neurologist would make less money, and the general public would be better off. A good deal has been said about early diagnosis, but it has not been sufficiently emphasized that that diagnosis can be made only by laboratory methods. No man has a right to treat any ulceration, much less one which is possibly syphilitic, without being very sure of what he is doing. Only a small percentage, a very small percentage of our patients come to us with well defined lesions, in which a positive diagnosis can be made without examination. All cases should be repeatedly examined, and if they are simple affairs, they will heal of themselves during the period of examination. Any physician who endeavors to treat such conditions should be prepared to examine them microscopically, whereas the average man either lacks these facilities or will not take the time to use them, and just so long as this situation continues, just so long will syphilis continue to be the curse of the race. I do not think it makes much difference in the treatment whether you see the patient on the first day or many days later. It has been definitely proven by many observers

that the treatment of syphilis in the Wassermann-negative stage is dependent upon what you put into the patient and not what the patient does. The important thing is to keep up the patient's nutrition and to treat him intensively and at length. Short courses of treatment get you nowhere; the patient invariably returns to you with fresh trouble. I have in mind one individual who was supposed to be adequately treated, whose Wassermann was repeatedly negative, and who had been permitted to marry. Now there are four luetic children in that family, though there can be no visible lesion anywhere. A year's treatment is not enough, though there can be no hard and fast rule set down as to the duration of treatment. But we can say that it is folly to treat a patient for a few months and then wait for three to six months, because usually all we wait for is for the Wassermann to come back positive. Intermittent treatment of syphilis is just about as fallacious as the intermittent treatment of malaria was. We treat malaria with quinine every day now, not every third day, and we treat amebic dysentery continuously, not during an attack. In the same way, the only cure for syphilis is to treat it adequately and continuously, over long periods of time.

Captain O. C. Wenger, M. D. (Hot Springs): One of the important things we have to teach the general practitioner is that the average chancre does not resemble the text book picture. It all depends upon when the lesion is first seen by the physician, and whether local applications as caustics have been applied. Any lesion may prove to be a chancre, irrespective of its size or shape. We often see student physicians in the Hot Springs clinic examining by palpation to see whether they are "hard" or "soft". A chancre may be hard or soft, depending again upon the age of the lesion. The only examination one can depend upon is the darkfield, and this, if negative, by no means eliminates the diagnosis of early syphilis.

We have a well trained laboratory man, with years of experience in darkfield work, yet we find the possibility of error something like 30 per cent. This may be due to previous local treatment, or a few doses of neo. It is exceedingly dangerous to make a diagnosis of chancroid even when the darkfield is negative. One never knows. The longer I work with syphilis the less I am willing to make a diagnosis of chancroid. We see hundreds of cases in the course of a year of late manifestations of the disease who were previously diagnosed as cases of chancroid. There was some excuse for this error years ago, before the days of darkfields.

From a public health standpoint and in clinic practice, where patients cannot be placed under

observation for six months or a year, I think it is much safer even in the face of negative reports to treat these clinic patients as early syphilis. If the lesion is really chancroid we have done no harm, but on the other hand if the lesion is luetic we have done something towards the control of this disease. Chancroid is not a public health problem. Syphilis is. The former is comparatively rare, even in the big clinics, and the more expert we become in diagnostic methods, especially in darkfield examination, the less chancroid we will see. It is all right to speak of waiting for secondaries to appear, or a positive Wassermann, but so many of these patients that come under our notice have been given just enough neo-arsphenamine to prevent the appearance of secondaries, and the patient frequently labors under a false security for many years until later symptoms develop.

As to the question how long are we to treat patients with syphilis, there seems to be no agreement on the subject. Stokes and Schamberg, I believe, recommend three years of treatment. In my opinion the man or woman who has once been infected with syphilis must live the rest of his or her life in its shadow. It may never recur, but one never knows when it will reappear, and constant observation, with frequent physical examinations, is the only safeguard.

Dr. John Pratt (closing): I agree with Captain Wenger that the diagnosis of chancroid is a very difficult one to make. We must be careful in making it, and extremely careful after we have made it, for without observation of the patient we cannot be sure that we have not overlooked a case of syphilis. From the public health standpoint he is correct in what he says, but I doubt if we private practitioners could follow such a course; we get fees for our work, and we would certainly be accused of commercializing our profession and gouging our patients. The duration of treatment is one of the most debated questions in syphilology today. I think it better to keep the patient under treatment for a specific length of time; the average one will co-operate more readily if he has some goal to look forward to and does not believe that he will have to undergo treatment for the rest of his life. Scaring patients to death will result in a larger number of desertions than we have now. I see Captain Wenger's point of view; I served in the Army, where the principles of the Public Health Service were acted upon, and we treated our patients as long as they stayed in the ranks, though I don't know what happened to them after discharge. If of the 29 doctors to whom I referred only 2 continued their treatment over a period of 2 or 3 years, the rest deserting within 6 months, what are you to expect of the average lay person?

SPLANCHNIC ANALGESIA.*

EMMETT L. IRWIN, M. D.,

NEW ORLEANS.

Splanchnic analgesia is a form of regional anesthesia directed at the blocking of the splanchnic nerves. This is accomplished by the introduction of a suitable anesthetic solution into the retro-peritoneal space in the region of the splanchnic nerves and semilunar ganglia—thus bathing these structures in the anesthetic solution (0.5 per cent procain or novocain). This may be accomplished by either the anterior or posterior routes.

This alone is not sufficient for such produces analgesia only of those structures under splanchnic control. It is then necessary to employ either infiltration or block analgesia for opening the abdomen. The latter method is preferable and is effected by injections of 10 c.c. of 5 per cent solution within the rectus sheaths at the lateral edge between the serrations of the muscle. The number of injections is determined by the desired length of the incision. It may now be necessary to inject the peritoneum at the point of incision. Next a few c.c. of solution are injected into the peritoneum about four centimeters distance from the incision.

The insensibility of the visceral peritoneum has long been recognized but the parietal peritoneum is highly sensitive. One can handle, incise, tear, or burn a viscus without pain, but manipulation or pulling on the organ is associated with great discomfort and pain. The relative inaccessible location of the upper abdominal organs renders it difficult to execute surgical interference without manipulation and traction, thus producing pain and rendering it impossible to accomplish the desired result without some form of anesthesia.

In 1913 Kappis, through animal experimentation, gave to the profession the solution of the problem, and added a magnificent contribution to surgery of the upper abdomen. He learned that section of the splanchnic nerves caused loss of pain sensation in the stomach, spleen, bile ducts, and upper portion of the small intestines. During this same year he successfully injected for anesthetic purposes the splanchnics as they enter the semilunar ganglia. His results aroused much interest and stimulated suggestions for additional methods of producing splanchnic analgesia.

The great splanchnic nerve is formed on the lateral side of the eleventh dorsal vertebrae by roots from the middle thoracic sympathetic ganglia, receiving fibers from the fifth to tenth thoracic nerves by way of communicating rami. It passes through the crus of the diaphragm into the abdomen to join the corresponding semilunar ganglion. The lesser splanchnic nerve arises from the lower thoracic sympathetic ganglia, receiving branches from the tenth to twelfth dorsal nerves and enters the abdomen in company with and lateral to the great splanchnic nerve, where it, too, joins the corresponding semilunar ganglion.

The semilunar ganglia are two in number, situated retro-peritoneally one to either side of the median line and resting opposite the first lumbar vertebra immediately above the pancreas. They are partly covered by the vena cava on the right and pancreas on the left.

Four methods have been advocated for accomplishing the injection of the splanchnics: Two by the anterior route (Wendling and Braun); two by the posterior route (Roussiell and Kappis). Wendling, after blocking the anterior abdominal wall, blindly thrusts a long needle into the epigastrium one centimeter below and one-half centimeter to the left of the ensiform, perpendicular to the body, passing through the liver and lesser omentum, hoping to

*Read before the Orleans Parish Medical Society, October 22, 1928.

reach the ventral surface of the first lumbar vertebra, where he injects 50 to 80 c.c. of 1 per cent novocain. This method is mentioned only to be condemned and forgotten.

Braun's procedure is far more practical, making the injection after laparotomy. The liver is gently elevated and the stomach retracted downward to the left. The left hand is passed above the lesser gastric curvature, pressing the index or middle finger into the space between the aorta on the left and vena cava on the right, gaining contact with the anterior surface of the first lumbar vertebra. The aorta, easily identified by its forceful pulsations, is pushed to the left. The vena cava offers little resistance and collapses beneath the finger, while the aorta offers greater resistance, and may not be so easily punctured. The especially designed needle is passed along the dorsum and radial side of the finger until its tip is reached, when the bluntly beveled point is introduced with a quick jab into the retro-peritoneal space, striking the body of the first lumbar vertebra. Here the injection is made of 40 to 70 c.c. of $\frac{1}{2}$ per cent procain solution. Before making the injection aspiration should be done to ascertain whether or not blood is obtained, and, if so, the procedure should be abandoned.

The posterior method has been championed by Kappis, who injects the splanchnics beneath the diaphragm, using a single point of puncture along the lower edge of the twelfth rib, 7 cm. lateral to the median plane. This point is generally opposite the spinous process of the first lumbar vertebrae. Here an intradermal wheal is raised and with patient in the lateral position a 12 cm., 18 gauge bluntly beveled needle is introduced until it strikes the twelfth rib, when it is passed below this structure, slightly inclined inward, forward, and upward toward the vertebra so as to make a 30° angle with the sagittal plane. The needle point reaches the vertebra at the junction of its lateral and ventral surfaces

in close association with the splanchnic nerves. The needle is now introduced upward to a point 3 cm. above the point of first injection, where 20 c.c. is again deposited, and lastly an additional 10 c.c. is introduced 2 cm. below first injection. This makes three injections through the point of puncture; similar procedure on the opposite side. This procedure endeavors to deposit the anesthetic solution into the retro-peritoneal space, opposite the ventrolateral surface of the upper, middle, and lower portions of the first lumbar vertebra. The author has found that through a single puncture one injection of 30 to 40 c.c. of the anesthetic solution at either one of the above locations is sufficient to effect splanchnic analgesia.

Marc Roussiel claims splanchnic analgesia is accomplished by paravertebral injection of the tenth, eleventh and twelfth dorsal nerves, depositing 10 c.c. of 1 per cent novocain at each point. The injection at the twelfth is made at a deeper level than the others and the author believes it is here that he accomplishes the block.

Before entering upon the task of surgical interference with local anesthesia, it is important to familiarize the subject with the sensations to be experienced. As the individual will be conscious of the touch sensation, he should be made to understand that there should be no pain; especially is this true of foreigners, mixed breeds, and those highly apprehensive of the procedure. After the operation is begun and particularly after the abdomen is opened, the surgeon must be keenly alert to note any change in the patient's mental attitude, and, above all, he must handle the tissues with care. The anterior method of Braun is associated with considerable discomfort when the hand is passed beneath the liver, pushing aside the aorta to reach the surface of the first lumbar vertebra. This produces air hunger and feels as though the heart itself is grasped in the hand, but if this is previously explained to the patient there is no objection. Immediately

the injection is made there is instant relief and comfort. This procedure is under control of the sense of touch, and frequently the sight. However, it is not free from danger in the hands of the inexperienced and should be practiced on the cadaver before employment in the living. Its dangers are injury to the aorta, vena cava, omental vessels, and possibility of intravenous injection. With little care neither of these should occur. Braun uses the median incision for laparotomy, but the rectus incisions may just as easily be employed.

This form of analgesia has now been employed by the author for four years and it has been thoroughly satisfactory for all surgical procedures in the upper abdomen, accompanied by complete absence of pain, perfect relaxation and absence of intra-abdominal pressure—evidenced by the lack of presence of the viscera in the wound. There may be a fall in blood of 25 to 30 mm. with associated symptoms, but a preliminary injection of ephedrin sulphate readily compensates for this. The patients occasionally experience a feeling of nausea and may vomit—this should only momentarily interfere with the progress of operation. It can be employed in any individual regardless of age, having been used by the writer in persons five weeks of age (injecting 5 c.c.).

The anterior method, in cases where there are matted adhesions filling the upper abdomen, may be given with difficulty or its use may be impossible. It can only be administered after laparotomy.

The posterior method before laparotomy, may be employed regardless of the condition of abdominal viscera—or type of incision. Its use will enable exploration of the upper abdomen when incisions other than the epigastric type are used. It is regarded as the more safe and most generally applicable type of injection.

CONCLUSIONS.

1. Splanchnic analgesia marks a forward step in surgery of the upper abdomen.
2. Its object is to introduce into the retro-peritoneal space opposite the first lumbar vertebra sufficient anesthetic solution to saturate the splanchnic nerves and semi-lunar ganglia.
3. It is thoroughly efficacious for all operations upon the stomach, duodenum, spleen, pancreas, gall-bladder and its ducts, the upper third of the small intestines, and transverse colon. Its induction is simple but not without some danger.
4. The analgesia is absolute, relaxation is complete, and the intra-abdominal pressure is negative.
5. It is dependable and its duration is from two to three hours.
6. The post-operative course presents less alarming symptoms than with general anesthetics. There is rarely nausea, vomiting or pain, or the need for narcotics. Gaseous distention is absent or negligible.
7. The method of Wendling is dangerous and should never be used. The procedure of Roussiel is unnecessary. Braun's anterior injection after laparotomy is practical but its use is limited. The modified Kappis procedure is the most generally applicable and the simplest of application.
8. Splanchnic analgesia is most highly recommended for upper abdominal surgery.

DISCUSSION.

Dr. Alton Ochsner: I want to emphasize a point Dr. Irwin made concerning the feasibility of splanchnic analgesia, especially in upper abdominal work; there is no doubt that one can with safety employ this form of anesthesia. The anesthesia, however, is not without danger; cases have been reported of injuries to lung, inserting the needle in the vena cava and even tearing the vena cava. These mishaps can, however, be avoided if a little care is taken.

I prefer the method of Kappis because it is possible to have anesthesia before the patient is operated on. I never have any difficulty in getting perfect anesthesia and I find that the in-

dividuals I operate on prefer this method that when it is given by the anterior route. We have noticed in about 200 cases (mostly posterior route) a fall in blood pressure of about 20 millimeters mercury. Aside from this there have been no other bad symptoms or signs except one patient who developed a complete anesthesia of the lower extremities—at least, he said he was anesthetic. Fortunately, at the termination of operation, he could move his extremities. This is the only case of the kind I have ever seen and I am at a loss to know what happened.

I feel that there are many indications for this form of anesthesia and especially with patients who are bad risks that splanchnic offers a great deal.

Dr. Emile Bloch: I am rising merely to make a few comments, for anything I could say in discussing this subject is to be found in Braun's and Finsterer's books.

My experience with splanchnic analgesia covers a period of four years, during which time I have employed it about fifty times. Dr. Irwin says this type of analgesia can be used successfully in any case, irrespective of age, but in my opinion it is ideal for the elderly or middle-aged individual; on a young person it does not work so well. I have been unfortunate in the posterior route, having failed in all I have tried. I now use the anterior route exclusively.

An objectionable feature of splanchnic analgesia is where you have to explore the lower abdomen. Some men believe that appendicitis has something to do with gastro-duodenal ulcers. If you use the upper median incision you are going to have difficulty in exploring the lower abdomen through that incision. The splanchnic nerves come from the lower dorsal plexus; it is therefore an ideal anesthetic for upper, but not for lower abdominal work as far as the cecum, appendix, etc.

Dr. M. J. Gelpi: Dr. Irwin does his splanchnic work so very well that I was highly complimented on his asking me to discuss his paper. I met him on the street a couple of days ago and asked him what he thought I should say on the subject and he said: "Tell them the truth." It is a pity that all authors and essayists do not feel the same way about this. So I will try and tell you the truth as regards splanchnic.

First of all, I must confess a debt of gratitude to Finsterer for opening my eyes to the possibilities of splanchnic. Before he came to New Orleans and demonstrated its value so beautifully to us a few years ago, I had always looked upon it as a "tour de force," a sort of trick, that only a few could accomplish. I am convinced that splanchnic analgesia has a distinct value for upper abdom-

inal work, particularly for depleted patients from any cause, such as carcinomatous conditions; conditions with coincidental tuberculosis; or where they have suffered from hemorrhage, as from ulcer. I believe that many times the use of splanchnic will permit you to do work in the upper abdomen with safety where you would hesitate to do it with a general anesthetic. And speaking of the perfect relaxation obtained with ethylene, mentioned by the discussants of the preceding paper, I have never seen such perfect and complete relaxation as you get with splanchnic when supplemented with blocking of the abdominal wall. Splanchnic lends itself particularly to gastric surgery and upper abdominal surgery in general, and although in gall-bladder work it is perfectly feasible, it is less satisfactory here than in gastric surgery. In gall-bladder work you must be particular to anesthetize the round ligament of the liver. We have been able to perform successfully and with perfect satisfaction gastroenterostomies, cholecystectomies, resections of intestines, explorations and appendectomies. For pelvic work, of course, supplementary anesthesia with local or general is necessary; if local is used, the supplementary anesthetization is obtained by blocking the broad ligaments and the region of the vaginal vault particularly and the lumbar plexus.

I am trying to develop a technic in removing the appendix which will permit of exploration of the gall-bladder and duodenal regions. This is done by doing posterior splanchnic on the right side, using a somewhat larger quantity of anesthetic material than is used when both sides are injected posteriorly by supplementing this by blocking the anterior wall on the right side in the area lying between the lower margin of the ribs and the anterior superior spine. This anesthetizes the entire abdominal wall on the right side and if supplementary injection is made in the peritoneum extending from the upper angle of the incision to the round ligament of the liver, the hand can be passed along this area in order to explore without causing any undue disturbance.

My personal preference, where this is possible, is for the anterior route, although Dr. Irwin has persuaded me of the entire feasibility of the posterior route. In the use of anterior splanchnic, however, there are certain technical points to which I wish to call attention. I find, in following Finsterer's technic, grasping the stomach with the right hand, there seems to be a certain degree of pain elicited. This can be avoided by first injecting the mesentery of the stomach with novocaine. Many patients object to this slight pull on the mesentery and it is a nice little trick, after opening your incision, to inject the anesthetic in the mesentery of the stomach before putting

it on tension. Another thing: I feel that the safety of the anterior injection is increased by using the Dunham needle, which is so constructed that the portion of the needle that goes behind the peritoneum is in a sheath and you find the solar plexus with the end of this sheath and only insert the needle after the localization with the sheath, which is blunt and therefore harmless.

One disadvantage in splanchnic, as in all local anesthetics, is the absence of what Dr. Matas calls "the luxury of going to sleep." I feel that analgesia with local is not perfect if your patient has to grunt and groan and be there for an hour or more in fear and trepidation, so I try to obviate that by adopting the suggestion of Cooper and Gwathmey, giving the patient an hour before operation 10 grs. of chloretone by mouth, or in cases where operation has to be done on the stomach, by rectum, and at the same time, give $\frac{1}{8}$ gr. of morphin in 2 c.c. of magnesium sulphate (50 per cent) with novocain. We repeat the injection of morphin and magnesium sulphate in 15 minutes, and in cases of very nervous or very large individuals we repeat the hypodermic for the third time after a 15 minute interval. In this way the great apprehension is done away with. We feel so kindly toward the method that we have adopted this routine as a preliminary for even our ether and ethylene cases. It certainly requires less anesthetic and the patient goes under in a much better mood than without it.

Conclusions: 1. While, in my opinion, splanchnic is not applicable as a routine unless you have perfect team work, it certainly has a definite field of usefulness and will permit you to do work that you will hesitate to do without.

2. I think that any man who does abdominal surgery should be equipped so as to be able to do both the anterior and posterior splanchnic.

Dr. Emmett L. Irwin (closing): I wish first to thank Dr. Gelpi for his splendid discussion, but I can not agree that the anterior method is preferable. This procedure is valuable and has its uses. One should get analgesia one hundred per cent with the posterior route, while there are certain conditions which render the anterior technic impossible. By way of example, picture an old gall-bladder condition accompanied by a peri-cholecystitis, with all the upper abdominal viscera matted together in one conglomerate mass of adhesions. Here it would be useless to attempt to introduce the finger into the proper position to effect anterior splanchnic; however, there would be no hindrance to accomplishing splanchnic analgesia by the posterior route.

It has been stated that anterior splanchnic can only be performed through a median incision, but it has been possible to successfully effect this type of analgesia through other incisions.

Referring to Dr. Bloch's statement that the ideal subject for splanchnic is the elderly, or middle-aged, it has been found to be equally satisfactory in subjects of all ages.

In closing, I wish to kindly thank Drs. Ochsner and Landry, and others, for their remarks.

ACUTE PELVIC INFECTIONS IN THE FEMALE.*

A. G. PAYNE, M. D.

GREENVILLE, MISS.

There is no doubt that pelvic infection is one of the most important subjects confronting the medical profession at the present time. The very diversity of opinion that has been expressed in recent publications seems to show that it is far from being settled.

The mere fact that the etiology of such infections embraces so many causative factors, should cause one to look for and treat those conditions which will lessen the disease in question, by adequate treatment or operative procedure.

The three main causative factors of pelvic infection are: Neiserian, septic abortion and cervicitis. All of these conditions are so amenable to treatment that we should, year by year, see less pelvic infection.

Gonorrhea of the external genitals is, quite often, one of the most obstinate conditions to cure and often necessitates more zeal on the part of the physician than the average man cares to show and more fortitude, perseverance and abstinence than many women with such a condition will endure. Thus it is that the local infection, inadequately treated, goes into the cervix and so into the pelvis.

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The subject of abortion, in all of its phases, is most important to the woman who has one. She should be treated conservatively to that end, that no infection will go beyond the uterus. This is one of the most meticulous questions before the profession today and one that is quite unsettled as to the best mode of treatment. I think all will agree that in incomplete abortion the uterus should be cleaned out with sponge forceps and irrigated with a dull curette. In septic abortion, not knowing what organism may have been introduced into and through the uterus and how much damage may have been done to the adnexa and parametrial tissue, there is but one condition in which one is justified in entering the uterus and that is hemorrhage.

Cervicitis is an outstanding causative factor of pelvic infection in all ages. Virgins harbour such conditions more often than we imagine and carry the condition for years on account of timidity. How many are there of us who examine the cervix one month after abortion or labor to ascertain its condition? Many cases of mild fever following labor are from an old cervicitis with latent infection. The question of treatment of cervicitis and endocervicitis is quite a problem to both patient and physician. They assume much the same role as in the case of Neiserian infection when treated by the usual methods in vogue; that of local applications, tampons and douches.

A great many causes of pelvic infections involving the parametrium and adnexa are caused by office treatments, which in the main, do not effect the desired results no matter how strenuously and persistently carried out. Some form of cautery treatment is, really, the only rational treatment for erosions, slight lacerations during the childbearing period, cystic cervixes and endocervicitis which do not require more formidable measures to effect a cure.

We have learned a great deal about pelvic infection that we did not know twenty years ago when Simpson revolutionized the

treatment of tubal disease. Prior to that time its management had been purely surgical. Operation was done as soon as a diagnosis was made and usually a complete ablation was the result. How many of us older men are not guilty? And yet the pendulum, at the present, is not swinging as it should to the conservative side of treatment. It is high time that we take stock of our surgery in such conditions and by careful follow-up records learn how much of it is more than useless and then, if possible, substitute some simpler methods that will yield better results.

There is no field in the realm of medicine in which the above is more applicable than in the acute infections of the female pelvis. There is no region in the human body in which so much destruction can be wrought by untimely operation, when no operation can be done at the time of acute inflammatory process without producing great morbidity and probably death. When presented a case with an acute infection in the pelvis no man can say what the outcome of such a case will be. Careful history taking, the clinical picture, with the assistance we can get from the laboratory will usually guide us as to whether we are dealing with an acute appendix, ruptured tubal pregnancy, or a strangulation, or thrombosis of a pelvic organ or neoplasm, in which instance immediate operation should be done.

The differential diagnosis between an acute appendicitis and the acute infections of the pelvis sometimes taxes our clinical accumen to the utmost. In acute salpingitis the patient does not appear so ill, the temperature is usually high but the pulse is not in accord with the temperature. The face is often flushed but not to the same degree anxious and apprehensive. The function is not so greatly disturbed, nausea and vomiting are not a feature, though there may be considerable distention. In this differential diagnosis do not forget that you have a finger to guide you. Do not deny the woman the right of a pelvic examination.

In salpingitis you have your bilateral tenderness and masses to be felt and in acute appendicitis the right side tenderness may be felt only.

In ruptured tubal pregnancy, a thrombosis of a pelvic organ, a strangulation or a neoplasm we usually have symptoms that will lead us to suspect them and it is in such cases that the sedimentation time is so invaluable. In the above conditions where there is no inflammation, the sedimentation time is not quickened. As a general rule the sedimentation test should be employed in all acute pelvic conditions.

It is of aid in distinguishing the unruptured tubal pregnancy, for the acute salpingo-oophoritis, a condition with which it is often confused. In ruptured tubal pregnancy, the sedimentation test shows the blood sinking time to be at a normal level for the first twenty-four hours after which time it becomes more rapid and simulates an inflammatory lesion. Used in conjunction with the leukocyte count, it is a check and an index that will more safely guide one as to when to operate upon the patient with safety. The fluctuating leukocyte count together with the moderate elevation of temperature differentiates ectopic gestation from a purulent salpingitis with its more uniformly high leukocyte count and fluctuating temperature. One is seldom justified in opening the abdomen for a pelvic condition with less than a sixty minute sedimentation time and when done in the acute condition is, usually, disastrous to the patient. As Curtis puts it, "Those whose fingers itch to operate" have too good an excuse to do so when presented with such a case, and the abdomen is opened and all that the poor woman may hold sacred is removed or mutilated, when notwithstanding, for the past twenty years it has been the teaching of such men as, Simpson, Chipman, Polak, Matas, Miller and others too numerous to mention, men whom we all know to be men of too high a type to teach any thing but that best suited to the poor afflicted woman and the men entrusted to

properly care for them, when they say that it is criminal to operate on a case of acute pelvic infection. We should heed the teachings that we know to be sound and not be in a great hurry to castrate the woman any quicker than we would a man who has a gonorrheal orchitis. Let us reason the matter out, it is the easiest thing on earth to understand. Custom and habit; habit to operate upon the woman and custom to treat, conservatively, the man.

Recently while visiting clinics, I witnessed an operation for varicocele that impressed me very much. The operator for some reason had to remove the testicle which brought the operation to a speedy close. He was very anxious about the matter and went in to talk it over with the pathologist. I am sure that there was a question in his mind as to what complications might come up about the removal of an organ that the man had not given his consent to have removed. Unfortunately for the woman, undergoing a pelvic operation, no such consideration is given her and she may sacrifice all that she most desires without recourse on her part.

The adequate treatment of acute pelvic infection consists of rest in bed, opiates enough to alleviate suffering, good food, fresh air and something to stimulate cell activity. Rest in bed, properly observed, is the same to a crippled abdomen and pelvis as a splint is to a broken bone and the same rules should be observed in the treatment of acute pelvic infection. The need of opiates in the treatment of these conditions is imperative, and one but rarely sees a habitue in a woman who has had to take opiates for the relief of pain in such conditions. These patients should be given enough opiates to relieve their pain. There is no medicine or other measure that will take the place of nourishing food and fresh air in these cases just the same as in puerperal infections. Therefore, I cannot stress too strongly, the urgency of plenty of nourishing food and fresh air.

Protein therapy is, probably, the only measure that we might term curative in these cases. The administration of five cc. of Aolin or milk in some form with the subsequent use of ten cc. every second or third day, given deep in the gluteal muscles, usually relieves pain and reduces temperature to a degree almost unbelievable. I have, so often, seen exudates disappear; pus tubes gradually fade away almost like the snow from the noon day's sun. The ice bag is indispensable in the treatment of pelvic infection, but to be of any value must be used almost constantly. The bowels should be kept open with mild laxatives and a daily enema. Douches are a nuisance in gynecological cases and should be used only for cleansing purposes.

CONCLUSIONS

1. Acute pelvic infection in women should be correlated and fade from the picture when considering acute abdominal conditions that require immediate operation.

2. Certain conditions in the pelvis which are eventually surgical are definitely non-surgical in their acute stage.

3. Operation in the acute stage when the physiologic balance is disturbed is too often a hazardous procedure and to open the abdomen is a surgical calamity.

4. It sometimes is the case in such conditions that one has nerve enough to open the abdomen and not enough nerve to close it unmolested when he sees the pathology and his mistake.

5. Eighty-five per cent treated conservatively will not require surgical intervention.

6. A few operators who advocate immediate surgical intervention in the acute pelvis may have a low mortality and may escape the dangers of peritonitis, post operative ileus, post operative adhesions, hemorrhage and fecal fistulae that are likely to happen to even the most dextrous operators, but think of the poor woman who has

made a losing fight even though she recovers.

7. Surgery should be reserved chiefly for the sequelae of the disease.

8. I believe in conservatism in the operative treatment of the pelvic organs, if the insult to the organ is beyond repair, the removal of that organ is justifiable.

DISCUSSION.

Dr. H. R. Shands (Jackson): I feel sure that Dr. Payne has brought to us the consensus of opinion of the leaders in the surgical profession in his paper. The leading men have been preaching this for years, and I think the plan outlined by Dr. Payne is the accepted plan now of treatment for acute pelvic infection.

I shall take just a minute to state that I have had some experience in some four or five cases in which I have proceeded a little differently from that which he has outlined.

I think if you have a pelvic infection or anything of that kind, of course it is foolish to operate. Every so often, once or twice a year, you will have brought to you a case with a diagnosis of appendicitis in a female. In my experience this has been the unmarried females. They come in with a fever as high as 103°. I am always suspicious of a high fever. In at least five or six cases of this kind I have asked concerning a vaginal discharge.

I had one case of a little girl three years of age. We made a smear and found that the child had gonorrhea. Acute salpingitis in a woman, in my experience, comes on like acute epididymitis in a man with gonorrhea.

When you catch one of these cases in a child within the first twelve or eighteen hours which has been brought to you on the diagnosis of appendicitis, in my experience, there is no exudate at all from the tubes. You may find a drop of pus, but if you remove those tubes, as I have done in a number of cases, the case gets well just about like an acute appendicitis case.

If there is any induration, it is certainly proof of objective operation. In at least 95 per cent of the cases I treat them exactly according to the plan outlined by Dr. Payne. I think in a few selected cases where you get an acute onset of acute salpingitis before it has involved the surrounding organs that operation may be avoided. I don't think anyone hopes that a tube which has had an acute gonorrheal infection will become open and bear children. With that exception, I agree entirely with the most excellent paper that Dr. Payne has presented.

Dr. J. S. Ullman (Natchez): I, too, want to compliment Dr. Payne on his paper. There is no doubt that we cannot have too much conservatism. In the matter of the care of those cases of incomplete abortion, I think we should be extremely careful in the use of a curet or any other instrumentation. On one or two occasions recently, I have used an electrically lighted hematoscope as an aid to finding out the location of the retained membranes. I think it saved a good deal of time and a good deal of traumatism in cleaning out the uterus. It enabled me to go more definitely to the point with a pair of forceps.

Dr. Payne said nothing about technic or treatment, but in cases of cervicitis we have two very efficacious methods that we may use now (one is radium and the other is diathermy) in getting rid of the chronic infections of the cervix. I believe that these methods, either one or both, properly used will do much to prevent the ulceration and induration that may later on go into carcinoma.

As I understood Dr. Payne's paper, I don't believe the type of pathology he was speaking of was the type that Dr. Shands had reference to. As I understood Dr. Payne, it was a chronic pus tube. I believe that Dr. Shands is right in taking out these tubes if you get them early.

Dr. W. H. Anderson (Booneville): I can add very little to this paper, but I certainly enjoyed it and am very much interested in it, especially with regard to the paper I read last year along the lines of the new era in surgery in which I stressed the importance of conservative surgery. This seems like a very timely paper, and is certainly one to which I could add nothing, except one type of infection we have that we might carry a little further.

Dr. Payne spoke of the erosions and the slight lacerations of the servix treated by actual cautery, which I think is decidedly the best plan. We have a type of case which comes along with these infections which flares up after the normal child birth where they have had lacerations of pretty severe types previously, and we get those infections sometimes for which the physician who delivers the case is blamed, while I think the infection was lying there dormant in the cervix and those lacerations after child birth cause those flareups.

This gives us a little room for not only conservative surgery, but brings to our minds the importance of a little preventive surgery in repairing lacerations of the cervix at the time of delivery.

I think it is pretty well agreed now that lacerations either of perineum or the cervix

should be repaired at the time of delivery. While this was thought hardly advisable in some cases, it seems to me that my experience has been that they get as great a number of healing cures by doing the repair at the time of delivery as they do by waiting until later on.

There is one good thing about it. The tissue is lax and there is not as much pain after repair of the perineum or the cervix. I believe, taking it all around, they heal as well on the average at that time as they do if you wait until later.

There is one other type of case which requires conservative surgery. We give the patient plenty of time, even after we make our incision, in cases with a large abscess of the pelvis. After we get on the inside we still need to do conservative surgery. I have had a few cases like that which have made me stop and think, because I lost a patient because of a very large abscess. The patient had had no fever for some time, with a great amount of pathology. The patient had no resistance or latent powers with which to carry through. Even in those cases that have been clear of fever for some time, occasionally you will find a case in which you need to be conservative, perhaps drain the abscess after you get on the inside rather than to do extensive surgery.

Dr. J. W. Jackson (Longwood): A well presented paper has been given to us on a subject that is of timely importance. I believe there never was a subject that has two sides to it as this one.

Conservatism in the healing of acute conditions in the female pelvis has taken hold upon every fair-minded physician and surgeon who wishes to do justice to his patients in justice to his reputation as a practitioner.

When confronted with the problem of treating a case of acute salpingitis, we should not ask ourselves the question, "Shall we operate at once?" or "Shall we wait until the disease becomes quiescent before operation?" The question that concerns us most is "Will an operation be necessary toward restoring this patient to health after conservative treatment has been practiced under the most favorable conditions attainable in a case?"

In the case of a young woman who has not borne children, why deprive her through castration of the duties and joys of motherhood? Why subject her to the vasomotor and psychoneurotic disturbance which often result and which sometimes causes considerable annoyance to both the patient and the physician.

I have observed acute salpingitis cases that get well at home, cases which have been treated conservatively along the lines that have been suggested. Some were being prepared for operations which I told the families were absolutely necessary.

Unfortunately, the ideal conditions that are necessary for a conservative treatment in these acute conditions are in the majority of average cases not obtainable. The problem that often-times worries the doctors is not the problem of determining what is best to be done; it is more frequently the economic problem. Many of our cases are already financially, as well as physically, wrecked. They are unable to stay at home for more than a week. Hospitalization is out of the question unless it be in a charity hospital, which is usually too overcrowded to admit another case. These unfortunates suffer complete attacks until finally admitted to the hospital where the surgeon has to make a long preparation before he has to operate.

This is the type of case, gentlemen, which places the surgeon in a compromising position and forces him to operate.

Dr. S. W. Johnston (Vicksburg): In 1925 I presented a review of 260 cases of inflammatory diseases before the Tri-State Medical Society. I want to take issue with Dr. Shands in operating on acute salpingitis. There is only one case of acute salpingitis that should ever be operated on and that is when the appendix is involved; and always if there is an appendiceal involvement in acute salpingitis, of course you operate. One should never operate on acute salpingitis unless there is an appendiceal involvement.

Dr. Will Mayo, in a paper recently published by him, takes the stand never to operate on acute salpingitis. If you have to do something, make a vaginal puncture.

Dr. T. B. Sellers (New Orleans): Dr. Payne has left very little to be said, but no one who has served in the Charity Hospital at New Orleans at the time to which I have reference could keep quiet when the question of pelvic infection is brought up.

When I entered the medical field, conservatism was in its infancy in handling pelvic infections. I have seen the Charity Hospital's mortality reduced from about 33.1-3 per cent to 1 per cent, and in some instances, even $\frac{1}{2}$ per cent. That is sufficient to prove, and statistics show as of 1000 cases handled there, that conservatism is the only treatment for pelvic infection.

There is one point which I should like to mention that the doctor referred to in treating endocervicitis. Caution is the only means by which you can reach the endocervical glands. Infection is not superficial; it is deep in the endocervical glands. You must destroy those glands in order to do anything with the infection; but don't think that any acute endocervicitis or acute gonorrheal endocervicitis is an indication for cautery. Leave

that case alone until the patient acquires immunity and until you have a chronic state before you cauterize; otherwise, you are liable to have a pelvic abscess from the invasion through the lymphatics.

The question of rest in bed, gentlemen, is an abused term. A great many of us tell a patient to go home and rest and report to us in two or three weeks, or we might drop around to see her in two or three weeks and find the patient not improved, or perhaps worse. We condemn the rest treatment, therefore, because of the patient's condition.

However, in order to get results in pelvic infections, the patient must secure absolute rest; that is, in the sub-acute, acute and chronic states. By absolute rest I mean they must use the bed pan, they must lie down to eat their meals, and they must not get up for anything.

I do not agree with the doctor concerning douches. I am a strong advocate for hot therapeutic douches, using about two to three gallons, depending upon the surroundings and the condition of the patient, once or twice a day. The idea is to get the heat and to get it at the walls of the vagina, and this heat should last for over a period of about thirty minutes each time.

I know in my hands patients have recovered more rapidly when given douches, and when those douches are given properly, than when they have not received them.

There is one other point concerning the douche. Have the douche not over a foot and a half or two feet above the level of the patient's hips. If you do not instruct the patient specifically, the trauma from the flow of water four or five feet high (the patient imagines the faster they receive the water the better it is), will do more harm possibly than good.

One other point mentioned by the doctor is the sedimentation test. I believe it is a simple test. There are three or four different technics. Those of you who are not using it if you will use it you will be well pleased with it in puerperal infections or salpingitis cases as a diagnostic and prognostic agent, and it will certainly keep you out of trouble. It will keep the medical men from sending a patient to a surgeon before it is necessary.

There is one problem the surgeon is always up against. A patient comes in from a rural community with an acute pelvic inflammatory disease. The question is whether or not to operate. It is very difficult at times to handle a situation of that kind. If you will do the sedimentation test, you will find it will help you considerably. You don't

need a microscope. Simply put 1 c.c. of blood in a little tube and some citrate of soda and you can make the test in your office. It is simple, but very delicate.

Dr. A. G. Payne (closing): I want to thank you gentlemen for the very liberal, and, in most instances, satisfactory discussion. Someone made reference to what Charlie Mayo said. I have heard Dr. Charlie Mayo say himself, when talking about using drains (and I use possibly his same technic), that he had a few in the cemeteries who would not be there had he put in a drain.

I want to say that I have a few people in the cemetery whom I wouldn't have had there had I treated those cases of acute infections in the pelvis conservatively as I treated the man with gonorrheal orchitis, instead of performing an abdominal section.

In regard to what Dr. Shands said concerning little children, I think that is the most distressing condition on earth which a doctor has to treat. It seems to me the same procedure should be gone through as we would go through in an older girl or a woman. Sometimes we forget the various conditions that are going to run upon us within the first four or five days after an abdominal section for acute salpingitis.

With regard to this moot question of incomplete abortion, I have tried to stress in these cases of incomplete abortion, and I believe from the many years of experience I have had that it is best to not curet but to curaye, as it were, put in a dilator and get out the retained masses which might be there.

I recently had one of these cases which I watched very closely. I first saw the case at my office. I put in a tampon and the woman came back to the office the next day with the fetus in the sac and with the placenta seemingly complete.

She continued to have pain and about the third or fourth day developed a little fever. I sent her to the hospital and did this simple washing out of the uterus, after which she had no more pain and no more trouble.

It is those cases of septic abortion that we have to leave absolutely alone. We can't afford to interfere with that woman. That is the only condition, I believe, that we have to watch closely, except in the case of hemorrhage.

In regard to cautery, Dr. Ullman said that I didn't say anything about the treatment of these conditions. I mentioned that a great many kinds of office treatment are worse, in my opinion, than useless, and some form of cautery treatment has to be used if you ever cure those patients.

I think Dr. Sellers brought out some valuable points. Of course, I don't agree with him about the douche.

SIMPLE GLAUCOMA: ITS EARLY RECOGNITION A PREVENTATIVE OF BLINDNESS.*

LUCIEN SIDNEY GAUDET, M. D.,

NATCHEZ, MISS.

It gives me great honor and pleasure to share in the privilege of representing the Eye, Ear, Nose and Throat Section before the General Session of the Mississippi State Medical Association, and I hope my paper will be acceptable to you.

In April 1928, the Mississippi State Legislature passed a law establishing the Mississippi Commission for the Blind.

Some time back the Mississippi State Board of Health mailed to each physician in the state, a letter and pamphlet entitled "That Eyes May See," which gave an outline of the duties of this commission, two of which are of especial importance and interest to the medical profession,—one as to the cause of blindness, and the other as to the prevention of blindness.

The establishing of this commission we should consider a very important and progressive movement, because we well know that the majority of blind people are helpless burdensome liabilities to their respective communities, as well as to the state. This is well attested by the fact that they can do little for themselves, or expect much assistance from their families, and often have to depend on charity for an existence. This condition of affairs the commission hopes to ameliorate and correct as time passes.

I hope each one present has carefully read this letter and pamphlet, as already an incomplete survey shows some sixteen hundred persons in our state, blind or nearly so.

Glaucoma is of paramount interest to all of us, because it is a disease that eventu-

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ally leads to loss of vision in all cases, but if properly cared for, many cases can be arrested, and loss of vision prevented.

The family physician is so often in a position to give proper advice and suggestions in regard to errors of sight, and should be ready to guide them along proper channels where they can derive the greatest benefits.

A patient complaining of some trouble with seeing should by all means be properly examined and the cause investigated. It may be an error of refraction, which can be corrected by glasses fitted by one properly equipped to do refraction. Or there may be pathological changes direct and indirect to cause a disturbance of vision. It may be a corneal, lens, uveal, retinal or optic nerve disturbance, or glaucoma, the disease we are now discussing.

Just a few months ago, a patient was brought to me for operation on her eyes because she was completely blind. Three years previous she had consulted her physician for failing eyesight. She said, that without examining her he told her to wait until she was blind, when she could have her cataracts removed, and see again. She did not have cataracts, but a complete glaucoma without even light perception. In the sorrow of my heart, I had to inform this poor soul her sight was gone forever. Our mistake, my friends! I hope none of you present has made or will ever make such an error. If you do not know, or have not the time to know, send the patient to someone that does know, and help reduce the number of blind, and make our consciences lighter.

I wish to cast no reflections on our physicians, for no greater, nobler, more honorable or self sacrificing band of men ever lived. I am only trying to help prevent blindness, where it can be done.

You may say, "Why lay so much stress on this particular disease? There are other diseases that cause blindness." True, as you say, but the type of glaucoma we are speaking of comes on slowly and insidiously, sneaking along like a criminal in the

darkness, gives so little warning of its approach and does damage that ultimately results in an irreparable loss of so much to the patient.

Simple glaucoma is often seen by the eye physician for treatment too far advanced to accomplish much benefit.

The reason is easily explained. There were no outward symptoms, nor pain, merely a gradual failure of sight.

What is glaucoma? An increase of the contents, with increase of tension of the eyeball. This disease is oftentimes confounded with trachoma, a disease of the lids and not the eye proper.

Glaucoma comes under several divisions. The most important are the acute and chronic congestive forms, and the simple or non-congestive type. The congestive types are not taken up at this time, because they present such symptoms as cause the patient to more often seek medical advice for relief, so we pass on to the simple or non-congestive type.

In this disease you have a gradual elevation of tension, which accounts for the freedom from pain and congestion, as the walls of the globe slowly stretch and adapt themselves to the change in the amount of the contents of the eye.

The etiology of this disease is still an unsettled question but most investigators claim the elevation of tension is caused by a disturbance of the relation between inflow and outflow of the contents of the eye.

Advanced cases of glaucoma are easy to diagnose, but as the purpose of this paper is to show the need for the early recognition of the disease, it is upon this I will lay stress, and endeavor to do so in a manner that will be most acceptable to the physician.

Many years ago, Dr. Paul Roemer, renowned Professor of Ophthalmology at Griefswald in speaking of glaucoma said: "If the general practitioner would learn to recognize early, the peculiar nature of the

disease from which the patient is suffering he would accomplish much good, and prevent much harm." This is the key to the situation, not only of glaucoma, but many other diseases whose prognosis depends on early recognition.

In the early stages of simple glaucoma, the patient complains of his vision being disturbed. It may be a little foggy, or objects or persons cannot so well be recognized some distance away. Sometimes colored halos will be noticed around artificial lights, also light flashes. These are all important enough to suggest investigation. The disease attacks both eyes, either together or at different periods, occurs in middle or advanced ages, more commonly in women, and often is seen in the colored race.

The observation that has impressed me so forcibly in all types of this disease are hypertension, arterio-sclerosis, and dental caries and pyorrhea and I make special mention of these for the physician. What can we conclude from the above tri-ad? Two things. (1) That the three pathological findings above mentioned come within the scope of the physician to recognize and diagnose. (2) If the elevation of tension in glaucoma is caused by a disturbance between the inflow and outflow of the contents of the eye, and it is so often seen in connection with circulatory changes and focal infections, then we may reasonably assume that glaucoma is a local eye manifestation of constitutional disturbance or imbalance.

Pardon my digression, but coming back to the early diagnosis. If the physician will take a little time and observe the eyes of such a patient, he can obtain much information. He will notice the cornea is not so bright and clear, the anterior chamber not so deep, the pupils sluggish in action, and oftentimes somewhat dilated. Such a patient may give you good vision if same is taken. I have seen one patient give 20/15 vision, the so-called gun barrel type. The veins on the outside of the eye ball may be

large and darker than usual. On palpating the eye, the increase in tension or hardness can be detected, especially when compared with a normal eye. Now comes the two most important aids in making a diagnosis, the taking of the visual fields and the examination of the eye grounds. Too few physicians are familiar with either, but both methods can be sufficiently practiced to give some aid in making a diagnosis. Any eye physician in your own community I am sure will co-operate if any should be sufficiently interested and have time, to instruct you to take fields of vision and use the ophthalmoscope. A Peter's campimeter and ophthalmoscope costing from \$45.00 to \$50.00 is all that is necessary, and I cannot too strongly urge the physician to get the ophthalmoscope and learn to use it, as it is so valuable an aid to him as well as to the specialist.

In these cases we have contractions of the visual fields, greater on the nasal side as a rule.

The ophthalmoscope reveals excavation or cupping of the nerve head or optic disc, beginning in the center and gradually extending to the margins, growing wider and deeper as the disease progresses.

I said nothing of the tonometer in measuring the hardness of the eye, because I feel this rather a delicate test, requiring some skill and practice to be accurate and had better be relegated to the eye physician, or one who does it often enough to keep in practice in the use of it.

The treatment of these cases covers considerable ground. Besides correcting other pathological conditions that may exist in the patient, mode of living, rest, diet, proper elimination have all to be taken into consideration with the medicinal treatment.

The surgical treatment will not be taken up here as this also comes under the scope of the eye physician.

On the treatment, I wish to take this opportunity to lay special stress on the use of

mydriatics and miotics in the eye. Mydriatics dilate the pupils and miotics contract the pupils. These drugs when used without proper diagnosis and knowledge often bring disaster to the patient. In a red and inflamed eye with much pain it is well to remember you may have either an acute iritis or an acute glaucoma. In simple glaucoma, miotics like eserine and pilocarpine are used in varying strengths and frequencies depending on the patient's condition. Of late, glaukosan, a concentrated adrenal extract solution has been used in glaucoma with success and is well recommended.

DISCUSSION

Dr. G. H. Wood (Batesville): Dr. Gaudet has given us such a complete and lucid presentation of the subject of glaucoma that he has not left anything for the medical man to say. The fact is, it reminds me very much of the financial status of the specialist and the general practitioner. The specialist's code of ethics is against a divide, so the moral is, if the medical man has anything to say or expects to get anything from a patient, he must do it before it gets into the hands of a specialist.

Glaucoma, like malaria, was named from an erroneous conception of the disease, taken from the two Greek words: "ylauko's" meaning sea green, and "wpa" meaning pathological condition, used in the time of Hippocrates—any opacity behind the pupil with a greenish reflection. Consequently, at that time many cases of cataract were diagnosed glaucoma and vice versa.

There are several very important milestones or events in the history and study of this disease. We might say that in 1830, when MacKenzie discovered or explained the relationship of the increased tension in the eyeball, that was one of the foundation stones for the study of glaucoma. Later on, in 1850, the ophthalmoscope came into use which revolutionized all the diseases as to treatment and study of the diseases internally.

Following this very rapidly, in 1851, Gager discovered the changes in the optic disk, known as cupping. But the greatest milestone of all was reached in 1856 when von Graefe correlated all the symptoms up to that time, such as pain, dimness of vision, tension of the eyeball, dilated sluggish pupil, greenish reflex, and cupping of the disk, and then devised the treatment of iridectomy, which has stood the test of time and is practically, I believe, recognized by most ophthalmic surgeons as the best treatment for glaucoma up to date.

There are several other very important things which have taken place since that time. I might mention that Hamburger goes on to show the relationship, that is, of glaucoma being a local manifestation of a systemic disease, showing also the condition of the choroid and the part played by the sympathetic nervous system, thereby devising the treatment of injecting adrenalin and suprarenalin into the conjunctiva near the outer angle of the cornea, which he said proved a cure in several chronic cases.

Later on Dr. Abadie, whom I believe is considered by some the dean of French ophthalmic surgery, makes the statement on the same line of the constitutional effect of certain drugs and he devised the adrenalin-ergotin-calcium chlorid aqueous solution administered daily, and reports good results also.

There is still another which I should like to mention. Dr. Ramsey, I believe, studying along the same line explaining the condition of the choroid, says that histamin and adrenalin are mutual antagonists and that whenever the system is overcharged with the histamin toxins there is an increase in the tension of the eyeball. Therefore, he recommends the giving of adrenalin whenever the capillaries are dilated or the circulation becomes impaired.

He makes a further statement similar to this: "All cases, even after an operation, require the same systematic careful treatment as they did before an operation."

Of course, Doctor Gaudet has covered the ground of what the state is trying to do towards helping these unfortunate people which I am sure every member of the profession appreciates, and I am sure the general practitioners are willing to do all they can towards eliminating this trouble as much as possible.

Dr. A. G. Touchstone (Meridian): Dr. Gaudet has covered this subject very thoroughly, but there are one or two points that present themselves in a case of secondary glaucoma. The patient complains first of dimness of vision during a routine examination and that is how these cases are sometimes recognized.

Early diagnosis means the whole thing in doing something for these patients. The patient complains of dimness of vision and upon inspection you find there is a cloudiness of the pupil or of the crystalline lens, the shallow anterior chamber, and on palpation there is a noticeable increase of tension. With the ophthalmoscope there is a beginning of slight cupping of the optic disk and these are the main points in recognizing the simple glaucoma.

The only treatment that I have ever seen that was worth while in the treatment of these cases was iridectomy.

Dr. Edley H. Jones (Vicksburg): I want to emphasize one point which Dr. Gaudet brought out. I want to emphasize that point with an illustration of a case.

I had the misfortune really of seeing a case a little over a year ago of a physician who had some trouble with his eye. I don't know whether or not he had much faith in eye men in particular, but it happened at that time a visitor who was a doctor was taken into his confidence and he told him how badly his eye hurt him. The doctor gave him some cocaine to relieve the pain. Cocaine dilates the pupil. It increased the condition and pained him more severely. The next day the visitor was gone and he spent a sleepless night.

He consulted another doctor who prescribed atropin. He was still having a great deal of pain and entered the hospital. I was called to see him. It was case of glaucoma that had been treated with cocaine and then atropin which resulted in an increase of all symptoms. That treatment, of course, was stopped immediately. Eserin-pilocarpin was used, but it was too late. The eye had never had good vision, as he had an accident some years ago. It was a sightless eye with severe increase in pain. It wound up by having to have his eye removed and the man is now wearing a glass eye, just because cocaine and atropin were used in a glaucomatous eye.

Dr. E. F. Howard (Vicksburg): I am not an eye man and I don't know any more about those things than most of you fellows do, but there is one little angle concerning what happens that these gentlemen haven't told you about. They tell you what to look for and what to do for it and all that sort of thing. But you look for it and just like me you don't know what you see and so the patient is no better off for your advice.

There is one little angle of it that they haven't thoroughly developed and that is if these cases come along slowly they are so frequently permitted to drift out of the hands of a doctor. The vision becomes a little dim, and under ordinary circumstances the patient is old enough that the

doctor can say he needs some glasses, dismiss him, and then the patient goes to an optician (I believe that is what they call them) who makes and fits glasses and doesn't do anything else in the way of practicing medicine.

I am rather intimately associated with a rather hard-boiled egg who does eye work. While he is a very quiet man under ordinary circumstances, not so very many months ago we had to call in the fire department because of the language he used, when a patient came into him who had been going blind for six months with a glaucoma and in that six months had been allowed by the family doctor, in fact with his suggestion, to consult one of these opticians who had fitted him with glasses. The trouble had continued along and the eye was then in a condition where nothing could be done for it.

If the general practitioner will remember that maybe he owes something to his patient at other times than the patient comes to consult him because she needs a dose of calomel, perhaps that will help some.

Dr. L. S. Gaudet (closing): I want to call your special attention to the bad case in Vicksburg on which they had to bring out the fire department to take care of it.

My good friends, the object of this paper was first of all to try to bring a closer co-operation between the physicians and the specialist. The more I practice the specialty of eye, ear, nose and throat work, the more I realize I need the general practitioner and the man who can help me go over the patient thoroughly. This business of thinking that the specialist takes the patient away and doesn't send him back to the general practitioner is wrong, absolutely. Gentlemen, that is not so. If a man is a good eye, ear, nose and throat man, he wants to know something from the dental standpoint, he wants to know something from the circulatory standpoint, he wants to know something in so far as the laboratory tests are concerned, and to do this he has to send his patients back to those men who can handle them, because you cannot be an eye, ear, nose and throat man and be a surgeon and general practitioner and a radiologist and a pathologist and be a good eye, ear, nose and throat man. You have to be exclusively that and work

night and day to do it, and oftentimes you don't make a success.

The next thing I want to bring out is to try to impress upon you to buy an ophthalmoscope and get in touch with an eye man who is a friend of yours and take a patient, with a normal eye, dilate the eye and then if the eye man is interested and you are interested, when he has cases that present definite pathology he is going to hold that case over and send for you to look at it and you can become quite well educated in the use of the ophthalmoscope which is a very important instrument, almost as important to the general practitioner as the stethoscope, because lots of times you can see pathological changes in the eye long before you can see them anywhere else, and that may be of vast benefit to you in the prognosis of that patient.

I should also like to call your attention to becoming interested in those cases complaining of poor vision. You don't know whether it is a case of error of refraction, or a case of pathology, but we want you to become interested so that when you do get a case that doesn't see so well, you won't say, "Oh, you need glasses. Probably it is nothing at all." Get that patient to think that perhaps it is the beginning of some serious trouble. It may be something else besides glaucoma, we don't know, but then it may lead to blindness and we must remember that. Just suppose it should happen to be among your friends or in your families. We want to try to prevent that if it is possible to do so. We want you to become interested in these cases who complain of poor vision. Send them to someone or try to make the diagnosis yourself or call in the eye man. Take the patient to the eye man yourself and show the eye man you are interested in that patient and that you are interested in what he has and you will find that the eye man is more than willing to co-operate.

As I have just said, the longer I practice this specialty, the more I find I need the general practitioner and the surgeon, and I need them more and more every day because the diagnosis of eye, ear, nose and throat conditions are rather complex. You can't do it by yourself. You are going to fall down on your diagnosis the majority of times.

Under those conditions we would like to see a closer and better co-operation between the specialty man and the general practitioner.

NASAL SURGERY ON ALLERGIC PATIENTS.*

B. S. GUYTON, M. D.

OXFORD, MISS.

I hope I may be pardoned for using some personal history as an introduction to the subject matter of this paper.

Being a victim of asthma and having gone the rounds seeking relief, from various allergists, I have become interested in this phase of work in its relation to nasal surgery.

A number of years ago before I had definite attacks of asthma, I had turgescent rhinitis practically all the time. A rhinologist thought a submucous resection would clear up my condition. For nearly three months following the operation breathing was quite difficult through the nose. About two years later after I had developed asthma I consulted Dr. Scheppegrell of New Orleans, who was a rhinologist but devoting a great deal of his time to allergic conditions. I had been advised to have an exenteration of ethmoids. Scheppegrell said in substance this: "Do not allow any one to operate on your nose again. Operations nearly always make the asthmatic conditions worse. I have one asthmatic patient now who has had seven nasal operations before coming to me and she has grown worse after each operation." Since that time I have been through the Clinics of W. W. Duke of Kansas City, and Ray M. Balyeat of Oklahoma City, who are making a specialty of hay-fever, asthma and allied conditions.

Duke has the following to say in his text on allergy: "The fact is that sinus infection in perennial cases seems a sequel of chronic reaction rather than a cause of reaction. In one patient subject to chronic perennial asthma in whom a number of polyps were found upon examination, an

*Read before the Section on Eye, Ear, Nose, and Throat at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

attack of asthma could be precipitated by exerting a little pressure in the antrum during the process of irrigation by a rhinologist. It is by no means certain, however, that this effect was not the result of temperature change rather than pressure change."

"This subject is important, for many asthma cases and many patients with nasal reaction have been made infinitely worse by radical and even by minor operations in the nose. One patient for example has been a chronic invalid because of asthma since the date of submucous resection made while he was serving in the army. Whereas, it is frankly admitted that careful nasal work occasionally gives marked relief in nasal and bronchial cases, as a rule the reverse is the case. There are few instances in medicine where careful thoughtful work in surgery can do as little good or as much harm. Because of the latter, operative work should be done only as a last resort."

Balyeat in his book on hay-fever and asthma has the following: "These patients frequently have abnormal conditions about the nose that should be corrected by the nose and throat surgeon, but they should never be done during or just before the pollen season. The conditions mentioned, however, are secondary and not primary factors in the cause of the asthma.**** Many patients are made worse by operations on the nose, especially those cases whose turbinates are removed. At least ninety per cent of hay-fever patients and seventy per cent of the asthma cases do not need operative procedure of any sort."

Both of these eminent men think that most of the nasal pathologic conditions associated with asthma are secondary and not primary factors in the cause of the asthma.

With this introduction to the subject I wish to mention some observations in my own work with nasal surgery and report some cases in my own practice, and some in the practice of others.

Many men of prominence advocate somewhat radical operations in most of the cases of asthma, and claim some wonderful results with such procedures. In my own experience surgery on pathologic conditions of the nose in allergic patients will usually give much relief for a while but very soon the condition has returned to its old state, or worse. I have seen intra-nasal openings made into antra as well as radical operations give considerable temporary relief. I have also seen submucous resections, tonsillectomies, exenteration of ethmoids, etc., give much temporary relief. Few of these operations, however, give permanent relief from the hay-fever or asthma. I have noticed that submucous resections on these sensitive individuals will almost invariably be followed with a great deal of reaction in the nose with a long drawn-out convalescence.

I do feel that a marked deformity of the septum should be corrected. I believe that a purulent condition in any of the sinuses should have drainage, but I think the surgery should be the most conservative possible and that radical surgery in these cases should be strictly avoided.

Last year at a round table discussion a question was asked Dr. Mosher of Boston about nasal operations on hay-fever or asthma patients. His remark was, "I am afraid of them, since I have seen one death from an operation on such a patient."

CASE REPORTS.

Case 1. Mrs. H. G., came complaining of complete loss of the sense of smell, some headaches, a very tight nose, with quite a bit of post-nasal discharge, weakness and sleeplessness. Examination of her nose revealed both sides greatly congested with much polypoid tissue in the ethmoid regions. Roentgen-ray examination revealed cloudy antra and ethmoids on both sides. After exenteration of ethmoids, and making large intra-nasal openings into the antra she had very marked improvement, gained weight, the sense of smell returned and she was quite happy over the results for a few weeks. After this short period of excellent relief she began to have very severe attacks of asthma, something she had never had before. After this time it became a question of

fighting asthma. She had the skin tests and was found sensitive to animal epithelials and whole wheat.

Case 2. H. H. had similar symptoms to the case described above but did not have the polypi, nor cloudy sinuses. Turgescence was marked and he had a bad deviation of the septum causing considerable obstruction to breathing. A submucous resection was done. At the end of the operation there was no sign of a perforation. He had tremendous reaction following the operation, lasting for five or six weeks. It was hard with the very best shrinkage to give him any air through either side. When the swelling finally disappeared, there were two perforations in the septum. The patient was very little if any, improved from his operation. Skin tests revealed him sensitive to feathers, horse, cow, dog, cat and eggs. Treatment along the allergic lines has improved his condition wonderfully.

Both of the above nasal cases had they been checked for allergic tendencies and treated accordingly could probably have avoided any kind of operation and still had much relief.

Case 3. B. G. was having symptoms that simulated incipient tuberculosis. In a splendid general clinic he had a thorough examination, including roentgen-ray of his sinuses. They were "unable to discover any pathology in the chest except some thickening about the hilus of the lung, so often seen in cases of chronic sinusitis. Plates of the sinuses revealed polyps in both antra, badly deviated septum and slight cloudiness of the ethmoids." He was advised to "have the polyps removed and the septum deformity corrected."

He was referred to me for treatment. In spite of the marked deviation of the septum he had good ventilation. The secretions in his nose suggested to me an allergic condition. Skin tests revealed sensitiveness chiefly to feathers, and other animal epithelials. All feathers were removed from his house, his nine cats killed, and he was instructed to stay away from horses and cattle. Ephedrine was used as a spray several times a day, and two or three times a week he had tamponades of argyrol. After a few weeks his cough had disappeared, and he had gained several pounds in weight. I then injected his antra with lipiodol and with the roentgen-ray found no filling defects in either.

I have had other cases with so much congestion in the antra that with transillumination and roentgenograms there seemed to be definite indications for surgical treat-

ment, and yet after finding these patients were sensitive to pollens or animal epithelials, having them treated for this with vaccines, avoidance of pets, etc., and using ephedrine in the nose, the antra completely cleared up.

A prominent nose man recently remarked that he believed every Eye, Ear, Nose and Throat man's waiting room contained countless numbers of allergic individuals, many of whom are being operated upon without results.

Dr. John P. Henry, of Memphis, who devotes all of his time to the study and treatment of allergic patients, makes this statement, "We had one patient last winter who had had eight operations without relief. Nearly all of our patients have had from one to three."

I wish to give here a few case reports that he has been kind enough to supply to me, from his records:

Case No. 30397. A boy, aged 5 years, came last August complaining of sneezing attacks and afternoon temperature. In the past he had had several attacks of tonsillitis after which his tonsils had been removed. He had also some trouble with his nose and sinuses. Both antra had been drained the month before. He gave a history of frequent colds and had complained of itching in the nose but not much running of the nose. On account of the fact that this child sneezed some practically every day and had symptoms of frequent colds, the parents had never recognized the symptoms as seasonal hay-fever. Also, for two years he had been having a daily rise of temperature varying from 99-1/5 to 100-4/5. Removal of the tonsils and irrigation of the antra had failed to control the various symptoms enumerated above.

On skin testing, this child was found sensitive to house dust, horse dander, cat hair, chicken feathers, dog hair, goose feathers, store dust, duck feathers, rabbit hair, sheep wool, cattle hair, Johnson grass, timothy, short ragweed, western ragweed, giant ragweed, orchard grass, sudan grass, and canary grass.

This case well illustrates the fact that there are a number of children walking the streets today who are sensitive to things and yet they do not have symptoms of typical hay fever or asthma. When the family history is positive for al-

lergy, that is, when other members of the family have been affected, then it is very important that these children who have frequent colds be tested.

Case No. 25173. A young lady, aged 26 years. Patient was first seen October 9, 1928. Chief complaint: headache, congestion of nose, frequent colds. This young lady had been going to Ear, Nose and Throat men for the past ten years. Her tonsils had been removed and she had a submucous operation. She had had the antra drained several times. When first examined, mucous membrane of the nose was congested and covered with mucous. The sinuses were cloudy on transillumination and roentgen-ray examination revealed the left frontal and the left ethmoid slightly cloudy. In spite of the fact that she had been going to ear, nose and throat men for a number of years, she continued to suffer with headaches, congestion of the nose and frequent colds. She stated that she had a cold more or less all the time and a daily headache. She had noticed that she could not use certain brands of rouge, face powder or perfume on account of sneezing attacks.

On skin testing, she was found sensitive to practically all feathers (duck, goose, ostrich and canary). She was also sensitive to certain animal epithelials such as cattle hair, guinea pig hair, cat hair, camel hair, dog hair, sheep wool etc., and orris root.

Treatment consisted of avoidance and elimination of animal epithelials, desensitization with orris root, and ephedrine as needed.

Comment: This is but an illustration of cases frequently seen who are definitely allergic but on account of the fact that they do not have hay fever or asthma, they consult oto-laryngologists and sometimes are operated upon several times without relief. This patient had seen a number of ear, nose and throat specialists but the last one she saw recognized the type of mucous membrane she had and referred her for allergic testing.

Case No. 28123. A man, aged 45 years. This case is reported because this man knew that he had hay fever but was under the impression that nothing could be done for it because he had taken "shots" on several occasions without relief. He had been troubled with his nose for fifteen years and had been consulting oto-laryngologists most of this time. He was practically never free of some sneezing or cold or some headaches. Frequently he would have to remain in bed two or three days at a time. His first nasal operation was in 1918 when he had a submucous resection

and a portion of the turbinate bone removed. He had also had his tonsils out. Patient first came to clinic on July 27, 1927. He came directly to the ear, nose and throat department complaining of frequent colds, frontal headaches and watery discharge from the nose. Ear, nose and throat examinations revealed an irregular septum with polypoid tissue protruding from the right ethmoid area. The mucous membranes of the nose were congested and covered with watery mucous.

This case is also reported to bring out the fact that a great deal depends upon the ear, nose and throat man's attitude with such a case. If this man had been subjected to further operative procedures and the possibility of allergy ignored, then this patient, we feel sure, would have obtained no relief. In this case the ear, nose and throat man recognized an allergic mucous membrane and before doing anything about the polypoid tissue referred the patient for skin testing and whatever treatment necessary.

On skin testing, the patient was found sensitive to a number of the grasses, particularly Johnson grass, blue grass, timothy, bermuda, red top, orchard grass and crab grass. He was also sensitive to the ragweeds and sages. In addition to this, he was found sensitive to feathers and a few animal hairs.

In spite of the fact that this patient is a flagman on a fast passenger train, desensitization with proper selection of pollens has given him over 75 per cent relief. By protecting his mucous membranes from the constant irritation from pollen, together with elimination and avoidance of animal epithelials, this patient went through last winter with very few colds. Ear, nose and throat examinations at the present time reveal the fact that the sinuses are clear on transillumination, the mucous membranes of the nose appear normal and there is only a very small amount of polypoid tissue in the right ethmoid area. When this patient first appeared for examination, if the ear, nose and throat man had removed the polypoid tissue from the right ethmoid area and given only local treatment to the nose for the congestion, sneezing, frontal headaches, etc., the patient would have had to take daily treatments and we know that relief would not have been complete because he would have been inhaling pollens all this time. As it is, he is not having any trouble with his nose and the polypoid tissue in the right ethmoid area is not deemed sufficiently important to warrant surgery, according to the present examination.

Case No. 22322. A woman, aged 42 years. This patient is interesting because, although it

may seem strange, she has suffered with symptoms referable to the head and nose for a number of years, sixteen years to be exact, and yet she had never recognized the symptoms as those of hay fever. She consulted a number of men and none of them had suggested the possibility of hay fever. This case is cited on account of the above and also on account of the fact that she has had *eight* operations about the nose and throat without relief of symptoms. The patient was not seen until last year on September 22. She was suffering intensely and it is no wonder because the peak of the ragweed season occurred last year on September 18, at which time there were 900 pollens to the cubic yard of air.

On skin testing this patient was found to be extremely sensitive to the ragweeds as well as grasses and a number of the animal epithelials. In fact, she was so sensitive that soon after the tests had been performed she had a systematic reaction which required adrenalin for relief. Co-seasonal treatment was started at once and the patient responded remarkably well so that in a very short time she was symptom free. Throughout the past winter she was very comfortable and is coming in this year early so that she can be desensitized, first with the grasses and following that with the ragweeds.

"It is a pity that the type of mucous membrane which she had was not recognized years ago instead of last year. However, it is only during the past few years that these conditions are being brought to the front and talked about. It is also true that it has only been during the past few years that we, as allergists, can give the ear, nose and throat men any help on these cases after they have recognized them. This fact, no doubt is greatly responsible for the fact that all cases are not being referred at the present time."

I wish to present three cases also from Dr. Blasingame's practice, any of which might have come to radical surgery had they not been tested for allergic conditions and found sensitive, and appropriate treatment instituted.

Case 1. A young lady, about twenty-five years of age, had had a constant postnasal dripping with sneezing and mucous discharge from her nose for six or eight months. We treated her by nasal shrinkage and tamponade for several weeks without any benefit whatever. Finally she was given an allergic test and found to be very sensitive to house dust, orris root and wheat flour. She was desensitized from these and was immediately relieved and has been completely relieved for the past four months.

Case 2. A young man, about thirty years of age, had perennial colds and asthma for about three years. His nasal mucosa was considerably congested. He had a deviated septum. He had bad tonsils. He was tested out and found to be very sensitive to feathers, especially pigeon feathers, and one or two other things. We removed his tonsils and then he was given treatment to desensitize him from the specific things to which he was sensitive and he has been practically relieved from his symptoms.

Case 3. A young man, about thirty years of age, mail clerk, having constant colds, developed a cough for which he was examined thinking he had tuberculosis. It was found that he had peribronchial thickening in his chest, with no other signs of tuberculosis. Roentgenograms of his sinuses showed them all densely cloudy. A considerable amount of pus was washed out of both antra. Complete exenteration of all sinuses might have been indicated but he was given an allergic test and found to be very sensitive to the dust that he was greatly bothered with in the mail car where he worked. Window resections were made of his antra to drain off the pus and he was given appropriate treatment for his sensitivity to dust and he has been greatly improved.

SUMMARY.

1. The vast majority of allergic patients consult the rhinologists first and he should be on guard to catch these cases that should be referred.
2. We all operate on many cases which should be referred to the allergists from the beginning.
3. We get much greater reactions following operations on allergic patients than we do on others.
4. Operations frequently give temporary relief, with a final return to the same if not a worse condition than the patient had in the beginning.

I have written this paper with a hope of stimulating closer investigation into the possibility of allergic cases as a factor in many of the cases with pathologic conditions in the nose for which we are now doing radical operations and getting no permanent results.

Since writing this paper I have received a letter from Dr. I. W. Barrett, formerly

of Lyon, Miss., and a member of this Association.

After receiving a program of this meeting and having noticed that I was scheduled to talk on this subject, he voluntarily wrote me the following personal history hoping that it would emphasize the thought I tried to bring out in my paper.

"Just two years ago this month while in Washington, D. C., attending the A. M. A. Convention, I was stricken with hay-fever, came home in June, worked hard all summer, and my symptoms gradually grew worse. In July, I put on a few skin tests and according to the way I interpreted the reactions, I was sensitive to several grasses and also to the ragweed pollens. Thought I would start taking the extract as soon as the season was over and prevent the return of symptoms the following season, but in September I came down with asthma which I have not been free from until this good day.

"November, 1927, I went to an allergist and he tested me very carefully and classified me as an animal hair case and started treatment accordingly. He disregarded the fact that I had gotten a positive skin test on myself, also the history, which I thought was very important. I kept up the treatment made up from feathers, house dust, dog hair, etc., and in January my friends decided to get me away from my work and take a rest, and they took me to Florida. Even in the winter time everything was pollenating right along and as I was not taking any pollen precautions whatever, I got worse all the time.

"While in Miami my nose got so completely blocked and I was so desperate waiting for a reply from the allergist, I went up to see a nose man and of course he recognized the allergic condition, but suggested it might be due to an infection, so he put a needle into my antrum and got some very thick secretion which he said had pus in it and advised an operation. The allergist had warned me against having any surgery done on my nose, but I

couldn't hear from him, so in February I went to Memphis where I fell into the hands of a good friend where I got a 'Standard 1928 Nose Operation' for infected sinuses.

"I had a submucous resection, turbinectomy and ethmoid exenteration at one sitting and a week later windows in both antra. I was already pretty thin and had lost about 20 pounds, but I lost another 20 pounds in ten days and altogether have lost 40 pounds, none of which I have ever gained back. Believe me, from then on until December, 1928, I had a nice, juicy infection on top of a wild allergic condition, taking from 10 to 20 shots of adrenalin daily to control the asthma, and am still taking from 6 to 12 shots of adrenalin daily to control my cough and asthma and sleep less than four hours out of twenty-four.

"There is no way of describing the suffering and discomfort I have gone through, probably due to too much surgical interference. I don't say the surgery was the cause of my long drawn out illness, but I do think I could have handled the situation a lot better had I not had so much done, and I do not feel unkind toward the surgeon for he was conscientiously doing all he could to relieve me.

"In July, after I had worried all the doctors in Clarksdale to death, and I was not getting any better (still not realizing it was pollen that was killing me), they thought I was going to die, and, as much as I had infected sinuses they thought the dry winds of San Antonio, Texas, would probably help me, and some of them knew an allergist out there. So they sent me out there the first of July. The day I landed there the allergist found out I was a pollen case and he told me that I had come to the worst place I could have possibly gone, so he put me in bed in a hospital and I did not get out of that room until January 8, 1929. I suffered torment for over six months, taking from two to three bottles of adren-

alin a week. Had to leave there on account of cedar pollen which was abundant and I was very sensitive to it.

"Came to Memphis in January, stayed there about two months and had begun to improve enough to get out in a closed car for a ride once a day without getting very tired, but when trees began to pollenate I had to move again, so I decided to come to Chicago as the air analysis according to some show a considerable comparative reduction in wind-borne pollens here and other places which have been checked up.

"So I am here at the above address, in the middle of the city on the lake front to give it a trial. Of course I am taking the usual feather, wool and house dust precautions. I have started timothy extract four different times and as low as .02 cc. of 1:500,000 dilution and by the time I would get to .04 cc. or .06 cc. I would have a violent reaction. So the allergist advised me to leave it off for a while and try to build up some or maybe I would get a little resistance where I could go ahead with it. I am also keeping a diet chart and watching that very closely.

"I had to sell my home, furniture, automobile, office and equipment and make it my business to get well, but up to the present it seems to me that business is awful dull in this line.

"I know I have burdened you with my troubles and I hope you will pardon me for doing so, but I wanted to emphasize a point, which I know you already have in your paper, that allergic patients with swollen, congested, engorged nasal mucosa without polypi should not be operated on until the allergic condition has been controlled (probably won't need it then) and especially during or just before the hay-fever season. I think this one of the most important points that a nose surgeon has to consider."

DISCUSSION.

Dr. W. A. Stevens (Greenville): Dr. Guyton has given us a very instructive paper. A short time ago I spoke to a friend on the subject of

allergy and he said he thought it was all a lot of bunk. I will profess myself as an agnostic in this field.

I am sure that at intervals all along down the line since I have been doing special work that I have seen cases of intractible, stubborn conjunctivitis, which were due to allergy. I have also seen edema of the eyelids, which I thought was due to allergy. In regard to the nose and asthma, I think the main cause is allergy. However, there are some things which will always puzzle me. In talking with hay fever patients nearly all of them tell me that their headaches start at certain times each day. I have been out of doors enough to know that nature does not make flowers that way. It seems to me that there must be some sort of nervous explosion in addition to the allergic cases.

I remember in one case a woman told me of a young son who suffered from hay fever and asthma. She took him to a doctor, who found him sensitive to several things. He put him on treatment and got no benefit at all. I had a little curiosity to see electricity tried along the spinal column. I have never been able to get enough enthusiasm to test these cases for about twenty different things and if I found they were sensitive to these thing I would be puzzled to know what to tell them. It would seem to me you would have to normalize the nervous system or get off the earth, both of which would be impracticable.

Dr. Guyton says he believes in correcting the gross deformities of the septum that cause trouble, and if there is pus in the sinuses he thinks they should be drained, but by the most conservative ways possible. I do not believe in a nasal operation in the presence of acute inflammation, following acute inflammation or immediately preceding.

That about covers my belief on nasal surgery, not only for allergic patients but for all patients.

Dr. D. C. Montgomery (Greenville): I think it takes a paper like Dr. Guyton's to wake us up. Now and then we get an especially good paper of this type, which makes us stop and think. I think his paper is a friendly constructive criticism of the ear, nose and throat men.

We are not complete in our diagnosis or in our examinations of our patients. If we were we would be apt to exclude those cases from our operating calendar. I still am of the opinion that there are definite cases of asthma, nasal in origin, due to sinus trouble, which, if properly corrected, will result in a cure to the patients.

Dr. E. F. Howard (Vicksburg): There are just two points that Dr. Guyton brought out fully. The first one was regarding mild cases which you might possibly overlook, where the patient has a

little nasal discomfort, due to pollen, and comes to the doctor and he does not recognize the condition. He says he will straighten it out and maybe he will be able to breathe better.

Those present who have been practicing only for the last thirty years do not remember the time when he had so much trouble in evaluating our cases because we did not know so much about the nose then. We would take anybody's word for anything. In my early days I smoothed out two septums in allergic patients. Whenever the patients came in the office I wanted to get out of the window and sometimes I did.

The other point is that when you send your patient to an allergist and he sends you back a negative report and that patient has got hay fever and you know it, don't always accept his word just so.

A gentleman came from Texas, past forty years of age, who had never had hay fever. Coming across the road between Shreveport and Vicksburg the train runs through rag weed country and he got a case of hay fever. I sent him to the allergist and he sent him back with a negative report. He came back about two weeks later and when he got to Vicksburg he could hardly see and could hardly breathe. He was a miserable looking person. I sent him back to the allergist. The allergist scratched him. He found a good reaction. Even when you have a severe reaction you cannot always rely on the skin test.

I think Dr. Stevens was right when he said he was an agnostic.

Dr. Robin Harris (Jackson): I don't like to operate on hay fever or asthma cases except in sinus diseases. I think it is absolutely necessary to clean out every bit of pathology you can find in every sinus that is affected. If you do that a lot of them get well. That does not mean that all these hay fever and asthma cases are going to get well, but they will get well if you do your sinus operation.

Dr. B. S. Guyton (closing): There are some cases in which surgery should be done. If you have a patient who has had asthma for a while and if you are not certain surgery will help you correct it, wait a long time before you do any surgery on the patient.

Dr. Stevens mentioned pollens and the time of day they affect people, the psychic effects, etc. You may be interested to know that pollens are much thicker in the air about 3 or 4 o'clock in the morning than at any time and everybody's temperature is lowest at that time of day, and you are more likely to have asthma at that time than at any other time.

Dr. Scheppegegrell had pollen collected from an airplane and found them as high as five miles.

SOME OBSERVATIONS ON MAXILLARY SINUSITIS.*

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It is the purpose of this paper to discuss those cases of maxillary sinusitis which act as a foci of infection and which, as a rule, are unsuspected. Neither the acute nor the advanced chronic suppurative types will be considered.

The maxillary sinus, originally described as the antrum of Highmore, is the largest and most accessible of the nasal accessory sinuses. It was natural that it should be the first to receive the attention of investigators. We probably know more about this sinus than any others, yet I still have some difficulty in diagnosing some cases that consult me, and I presume this difficulty is shared by others. In presenting this paper, it is my desire to stimulate a more or less round table discussion wherein each may present those practical points which he has found most valuable. Such a discussion should be helpful to all.

In such a gathering it would be superfluous to discuss anatomy and physiology. However, it might be interesting to review the characteristics of the mucous membrane. It consists of three layers: ciliated epithelial, tunica propria and periosteal; the later two are so intimately connected that, to all intents and purposes, they form one. The glandular supply is rather meagre, being mostly limited to the area around the ostia. The thickness of the normal membrane is usually about .02 mms. It is very loose around the ostia and prone to edematous swelling on slight irritation. Skillern remarks, "It is curious to note with what facility this thin, delicate layer assumes a thick myxomatous mass of tissue under the influence of suppurative processes of comparatively recent origin."

*Read before the Section on Eye, Ear, Nose and Throat, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

It is this characteristic of the membrane (that is, edematous swelling on slight irritation) that forms the basis of the pathologic physiology found in the maxillary sinus. It is easy to understand how such a swollen membrane would block the ostium (or ostia; as the case may be) preventing ventilation and interfering with drainage. The normal secretion of the membrane, combined with such exudate as might be formed, would furnish any micro-organism with a most excellent culture medium, *in vivo*. Should it result in a low-grade chronic infection, the sinus would then probably form a focus of infection. Ersner, in his pathological classification, says, "The non-suppurative maxillary sinus is divided into the following: ***(c) degenerative and retrograde types, under which belong the trophic and polyps. In this group we have patients who have had focal infection without actual nasal symptoms."

The type of infection is of primary importance. A virile infection, such as a streptococcus, is always dangerous; while a mild infection, such as staphylococcus albus, causes little concern.

These cases are usually referred to the rhinologist by the internist, seeking possible foci of infection, and must be given a thorough ear, nose and throat examination. Some cases demand every known diagnostic procedure while others are very simple. There is frequently a history of influenza, antedating the patient's symptoms; occasionally one of the acute infectious diseases appears to be the starting point. Some patients recall a bad cold, during which they suffered with pain over, in and under the eyes; with tenderness over the canine fossa for some time. However, the majority of these patients will have a negative history.

At the time of examination some patients will complain of headache. Occasionally, one will be tender over the sinus or complain of heaviness or tenderness in one or more of the upper teeth, but such

is usually not the case. With a negative chest examination, a dry hacking cough is almost diagnostic of some type of sinus infection, though, of course, the maxillary sinus is not always involved. It is worthy of emphasis that many of these antra, acting as foci of infection, have practically no history of symptoms that would lead one to suspect an infected sinus.

Examination usually reveals a chronic congestion of the nasal membranes on the affected side. Dr. D. C. Montgomery recently called my attention to the fact that a chronically hypertrophied inferior turbinate usually denotes an infected antrum and I have found this a fairly reliable sign. Of course it does not always hold true when the septum is deviated to the other side, causing a so-called physiologic hypertrophy. Free pus in the nasal cavities is practically never found in this type of case, but a postnasal discharge, a granular nasopharyngitis, or red streaks down the side of the pharynx are suspicions. Posterior rhinoscopy will reveal which meatus the discharge is draining from. A carbon arc lamp is essential for a proper examination. After shrinking and anesthetizing, the middle meatus can be examined with the naso-pharyngoscope. In my experience a rather profuse discharge always indicates an infected antrum. In such cases the ethmoid or frontal sinus, or both, may also be affected.

Transillumination is a valuable aid, but can only be considered reliable when it confirms the clinical examination. If both antra are affected, it is of no value. However, it should always be employed. Roentgen-ray is far more reliable, though not absolutely so.

When a case has been referred to me, seeking a focus of infection and the history, clinical examination, transillumination, naso-pharyngoscope and roentgen-ray examinations have been found negative, I do not pursue the matter further but give the internist a negative report.

There are doubtful cases, however, which should be examined further. Let us suppose that a case has a negative history, no symptoms, clinical examination negative except for a moderate amount of mucous postnasal discharge and a mild naso-pharyngitis, transillumination and naso-pharyngoscopic examinations negative and the roentgen-ray showing one antrum very slightly hazy. In such a case, the suspected antrum should be punctured, a culture taken and the antrum should be irrigated; iodized oil may be injected and the sinuses again roentgen-rayed. These procedures demand further discussion.

Much has been written about puncture and irrigation of the antrum. Two years ago Dr. McWilliams demonstrated the King's middle meatus canula before this section. Obviously it is unsuited to taking a culture. While I have used it satisfactorily in irrigating chronic antra, I think instrumentation of the middle meatus is unwise in acute or sub-acute cases; the histopathologic characteristics of the membrane readily explain why. Many trochars have been devised for puncture through the inferior meatus. Of those I have tried, I have found Dean's the simplest and best. A cottonwound applicator moistened in 10 per cent cocain solution should be introduced under the inferior turbinate and allowed to remain in situ for ten minutes. Then the trochar should be introduced, and with very little pressure it will easily pass through the thin portion of the naso-antral wall, just inferior to the attachment of the inferior turbinate. The trochar is withdrawn leaving the canula in place, a 5-cc. syringe attached and suction applied by withdrawing the plunger. Should the antrum not contain discharge, the plunger will withdraw easily; should it contain liquid pus, it will be drawn into the syringe; should it contain thick, viscid pus, the canula will appear blocked and nothing can be withdrawn. If the pus is withdrawn, a specimen should be collected; if not, 5 to 10 cc. of sterile normal saline

should be injected, withdrawn and sent to the laboratory for culture.

The antrum should then be irrigated, collecting the washings in a black-bottom basin. Pus or mucus shreds are diagnostic. It is interesting to note that in two cases in which I have taken cultures and irrigated the antra as outlined above, sending both to the laboratory, the cultures were negative, while cultures of the shreds were positive.

In a recent paper, Sewall advises the cytologic examination of the specimen. If pus, a direct smear is made; if culture is taken, it is centrifuged and a smear made from the sediment. He contends that mononuclear or polymorphonuclear leukocytes are rarely found in normal sinuses. He states that "normal antrums show no cellular content of inflammatory nature; low grade infection is productive of mononuclear leukocytes; while the more active processes furnish either polymorphonuclear leukocytes alone or polymorphonuclears mixed with mononuclear cells." I have adopted this method but have had so little experience with it that I do not feel that I am qualified to discuss it.

Usually, these procedures are sufficient to make a diagnosis, but if any doubt exists, iodized oil should then be injected into the antrum and other roentgen-ray studies made. I have found it more satisfactory to have these roentgen-ray pictures made with the patient in the erect position. McAuliffe advises fluoroscopic examination, but I have not tried this. With such roentgen-ray studies, the thickness of the membrane can be measured, and the presence of edema or polypi readily determined.

With such methods, more accurate diagnoses can be made. The culture is of further value, in that an antogenous vaccine may be made, if desired. I have found this of real therapeutic value in some cases.

Having arrived at a diagnosis of an infected antrum, the question of operation must be considered. In some cases, as

shown by the iodized oil roentgenograms, the membranes are so hopelessly diseased that a radical antrum operation is necessary. In the majority of cases, simple antrumotomy will suffice.

Since so many surgeons use such different methods, perhaps a discussion of technique would be interesting. I first swab the nasal mucosa with adrenalin; then, using cotton pledglets saturated in 10 per cent cocain sol., with the excess squeezed out, anesthetize the inferior meatus. I also block the sphenopalatine ganglion with a cotton wound applicator moistened with the same solution; I find this necessary to eliminate pain from operation. After ten to fifteen minutes the applicator and packs are removed. The antrum is opened with an antrum knife and the opening enlarged with a nasal rasp. A Grunewald punch is introduced and the opening enlarged backwards. A Yankhauer's punch is then used to lower the opening to the nasal floor. A back-biting punch is used to enlarge the opening forward, when possible. I have never found a back-biting punch that was of much good. If the opening does not appear large enough a Yankhauer punch may be used to enlarge it upwards. The bony edges must be smooth; no projecting spicules should be left. A small pledglet of cotton saturated in mineral oil is inserted under the inferior turbinate and left in place a few hours. This acts as a foreign body to stimulate clotting. The patient is placed in bed in a semi-reclining position; iced compresses are applied to the side of the nose, and an ice bag to the back of the neck.

The post-operative care of such cases is rather simple. After 3 days the antrum should be irrigated; further irrigations depend entirely upon the conditions that develop. Granulation tissue can usually be kept down with 25 per cent silver nitrate solution. If the nitrate fails, the area can be again anesthetized and the granulation tissue removed with a punch.

Should this operation fail to give results, a radical antrum operation may be

performed. Any case that has a chance of getting well with a simple antrumotomy should be given that opportunity. Except in hopelessly diseased cases, I do not believe that a radical operation is ever justified unless an intra-nasal operation has been first performed and has failed to give relief.

In cases demanding radical operation, I prefer the Caldwell-Luc, or Oertel operation. The latter has the advantage of leaving a larger and more accessible intra-nasal opening; its only disadvantage is the possibility of having a sinking of the pyramidal angle, such as may be encountered with the Denker operation; I have had the good fortune never to see such a result.

In conclusion, I wish to briefly present two cases, which will serve to illustrate these methods.

Case No. 1. Mr. P., white, male, single, 22 years of age, was referred to me August 22, 1927, by Dr. W. H. Parsons, for E. N. & T. examination. His chief complaint was arthritis of the hip joints. His family and past history were not remarkable. His only nasal symptom was "a bad odor in the nose," which was not constant, and he sometimes blew foul pus from the right naris. Examination revealed thick yellow pus in the right middle meatus, draining posteriorly. His tonsils were medium sized, showed chronic infection and contained a small amount of fluid pus. On transillumination the right antrum was dark; by roentgen-ray it was markedly opaque. Using a King's cannula, the right antrum was irrigated, washing out thick yellow pus. Lipiodol was injected. Lipiodol was also injected into the left antrum, for comparison, and roentgenograms were again taken. Marked filling defects were noted in the right antrum, the mucosa being over ten millimeters thick in areas. Radical antrum operation and tonsillectomy were advised. The patient readily agreed to tonsillectomy, but did not want his sinuses operated upon. I agreed to take out his tonsils, first; if that was not followed by relief, I would later perform the sinus operation. Accordingly his tonsils were removed, October 3, 1927, and he had an uneventful recovery. For the next two months I kept him under observation, occasionally irrigating his antrum thru the normal ostium. He finally agreed to a radical antrum operation, which was performed Jan. 6, 1928, following Oertel's method. His recovery was uneventful. Since operation he has had only one slight attack of arthritis, which followed a severe cold last fall. Nasal treatment was instituted and

shortly after the nasal condition cleared up, the arthritis disappeared.

Mrs. L., white, female, married, 31 years of age, presented herself for examination on May 6, 1927, complaining of a daily low-grade temperature that had existed with a few remissions for over two years. In fact she had gone West for a few months for her health, fearing tuberculosis, but not having any improvement, had returned home. She stated her family physician had made several thorough examinations and had said there was now nothing wrong with her except chronic malaria; he had not been able to demonstrate the plasmodia, but had based his diagnosis on her low-grade temperature and response to quinine. After taking quinine a couple of weeks, the temperature would disappear. He had prescribed two or three sixty day treatments, but after a month or so, her temperature usually returned. Her temperature was usually slightly sub-normal in the mornings, about normal at noon, and she had from one-half to one degree in the evenings. Otherwise, her history was not remarkable, and she did not complain of any symptoms. Her clinical examination revealed the following: Anterior rhinoscopy, negative; there was a small amount of mucous postnasal discharge, but I could not demonstrate its origin; transillumination and nasopharyngoscopic examination, negative; tonsils had been cleanly removed; she had one suspicious tooth, roentgen-ray of which appeared negative. Roentgen-ray of her sinuses showed a very slightly cloudy left antrum. Culture revealed a staphylococcus albus infection. I informed the patient that the infecting organism was a very mild one, but inasmuch as nothing else had relieved here, I advised antrumotomy, to which she consented. Operation was performed May 16, 1927.

Recovery was uneventful. In addition to the usual post-operative treatment, I gave her a course of autogenous vaccine. Thirty days after operation, she still had temperature, though the intranasal opening had healed. Three months after operation her husband came to me to tell me that she had been free of temperature for some time. At last report, some months ago, her temperature continued normal.

DISCUSSION.

Dr. E. F. Howard (Vicksburg): I must discuss Dr. Jones' paper as he always discusses mine and I must return the compliment. I know there is going to be so much going on in the next few minutes that if I don't get up now I won't have an opportunity. Also there are two or three little points on which we constantly disagree, and we might as well continue our disagreement down here.

He mentioned cases that gave no history of symptoms. I contend that in every case, if you go into the history close enough, you will find something that will lead you towards a diagnosis. I have never yet seen a case that gave these symptoms, of pain in some other part of the body, or temperature, in which there was not something in the history that pointed toward the true diagnosis. You will notice in the histories of both cases Dr. Jones cited, there were symptoms that should have drawn attention to the nose, not necessarily to the antrum. There was some odor, pain and discharge.

The other point is one on which he and I constantly disagree, and that is the roentgen-ray. Dr. Jones reads a roentgen-ray plate better than I do. He can look at it and see things that I don't dream of at all, and sometimes he operates on that patient and proves that he was correct. It is simply a case where every man uses a tool that fits his hand best. Some men get better results from points given by roentgen-rays than do others.

In my town we have two or three roentgen-ray men who diagnose a lot of sinus conditions from roentgen-ray findings, and it is not unusual to have patients come to us and say they were sent by Dr. So-and-So, and that his roentgenograms show the need of sinus surgery.

Recently I had a request for an opinion on a patient from a doctor who among other things had made a complete set of roentgenogram pictures, which is profitable. His opinion was given in this way: "You have a badly diseased left antrum. The picture proves it. Take it to the doctor and we will have it operated on." He sent her down to me to have the operation. I did not see anything to operate for. It seemed she had a pretty good antrum. I found a tooth in bad condition, and as the doctor had written me to do whatever was necessary, I sent her to a dentist, who took an roentgen-ray of the tooth, found an abscess at the root and did an extraction. I told her to come back within a couple of weeks. She came back and said: "If I never get any worse than I am today nobody will ever operate on my nose." The antrum was entirely clear.

We cannot consider the roentgen-ray except as one of the aids to diagnosis. No one procedure in diagnosis shows a perfect batting average.

Dr. Robin Harris (Jackson): Dr. Jones' paper has much meat in it. He touched on pathology and he touched on treatment and he said something about diagnosis, but the cases that he has alluded to most are the ones that are the hardest to diagnose. The one that is not a frankly chronic case or a frankly acute case; one not with a lot of polyps in the nose and one with not a lot of

pus. He picked the hardest case to diagnose. There is a low grade infection that probably takes some months to show up clinically. In those cases the bone is diseased long before the diagnosis is made. The bone is diseased microscopically in each one of those cases from which I have taken a specimen and as far as we know, the bone is diseased long before the diagnosis is made.

The point concerning lipiodol is one that is talked about very much at the present time. I have used lipiodol for three years and I find that with a good roentgenogram, well taken, with two or three different views, your pathology is more visible without the lipiodol than with it. It is a nice thing to use to demonstrate the gross pathological tissue but I find if your roentgenogram is well taken that you don't need it so much.

Dr. D. C. Montgomery (Greenville): I think when we get into the discussion of the subject of sinuses, it reminds me of the hot arguments we formerly had concerning tonsillectomy, for this subject vies in popularity with that of tonsils.

We all have our methods of treatment, with some of which we agree and some we disagree. However, we hope that a clearer understanding of the subject is thereby brought about, and better results obtained.

It is not difficult, of course, to diagnose an easy well defined case of sinusitis. There is a type of case however, which Dr. Jones did not mention. To my mind it is very important because of the difficulty in making a diagnosis. This is the type of antrum that has an atrophic mucous membrane lining the cavity. These cases are negative to roentgen ray examination and frequently the symptomatology is mild and not impressive. There are usually enough symptoms present to make us sure that we are dealing with some type of sinus infection. It is in these cases that iodized oil is invaluable. When injected into the antrum the roentgenogram may not show much disturbance, but it is found that the oil is not eliminated for from seven to ten days, due to the destruction of the ciliated epithelium which is normally present. In the normal antrum the time of elimination is from twenty-four to forty-eight hours, because of the sweeping action of the normal ciliated epithelium.

Dr. Jones spoke of an objective sign, the swollen inferior turbinate, which I have found to be of great value in the diagnosing of an early infection of the antrum. This sign is almost pathognomonic of an infection within the antrum, particularly where the middle turbinates are appar-

ently normal and the ethmoids free from disease. I have observed these cases where other means of diagnosis have failed, such as roentgen-ray, irrigation of the antrum, etc., eventually develop into a well-marked antrum infection. The one exception is the physiologic hypertrophy filling in a deviated septal space.

Dr. Edley H. Jones (closing): Dr. Harris mentioned that this type of case is the most difficult to diagnose. Such are the type cases we should discuss.

Lipiodol is an excellent aid, but I do not think it necessary to use lipiodol on every case. In fact, I use it only in the unusual cases when I feel that it can be of real value. A good roentgen-ray will very frequently show the thickness of a maxillary sinus membrane without using lipiodol. In this connection I might mention that Dr. Howard and I both have to read our own roentgenograms. And while we do not have the advantage of being given a diagnosis by the radiologist we probably learn a good deal more about our cases.

Dr. Howard mentioned that each case had a symptom. In writing this paper I meant to limit my paper to those cases which had no obvious symptoms such as would immediately lead one to suspect a diseased sinus. One case had a small amount of mucous postnasal discharge. Vicksburg's atmosphere has a relatively high humidity and I find that the average patient in the thirties has a small amount of mucous postnasal discharge and have come to the conclusion that a small amount is not abnormal.

It is necessary that we have the cooperation of the general practitioner. The ideal way to practice would be to have all of our cases referred us by the general practitioner, but I find that by far the largest amount of my practice comes to me first and it is necessary frequently to refer a patient back to the general practitioner for a general physical examination.

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NON-SPECIFIC DIARRHEAS.*

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In the past few years the presence of such a large number of untreated, undiagnosed, and certainly uncured diarrheas, coming as patients to the clinic, struck me that some study of the non-specific diarrheas would be apropos. "The need for study in this field can be seen from the fact that in a large proportion of the cases of mild, chronic, or recurrent diarrhea seen in practice, the cause is unknown. Occasionally the physician can demonstrate the presence of a bacterial or protozoal parasite, or an ulceration, but when we cannot do that he is left without any conception of the nature of the basic disturbance in function" (Alvarez). Non-specific is interpreted as those not secondary to a conspicuous etiological factor, such as malignancy, ulcerative colitis, bacillary dysentery, amoebiasis, pellagra, hyperthyroidism, and pernicious anemia.

NERVOUS DIARRHEA.

This is a matter of erratic peristaltic function, but can also result from deficiencies or excesses of the secretory function brought about through errors of nerve control. The stools are foamy, evil smelling, contain but little bile, and vary in number from four to fifteen daily, depending largely upon the amount of instability of the individual. The attacks are recurrent in type, because it is inconceivable that an exaggerated emotional state can exist long enough to keep up an abnormal peristaltic activity for weeks or months of a diarrhea. But under certain neurological states in which the aggravating psychic factors persist, these recurrences can be so common and the resting intervals between them can be so short that the condition could be called chronic. There is a close association between the activity of the intestinal tract and the nervous system, par-

ticularly the emotional sphere of the brain. Unfortunately, the expression of conflicts is usually in the form of gas and constipation when the symptomatology lies in the abdomen. The following case will prove that the latter premise does not always hold good:

Mrs. A. C. G. first came to the clinic in May, 1923, complaining of stomach trouble and acidity, saying that all food disagreed with her, especially in the mornings. She felt badly in the mornings upon arising, and has had alternating constipation and diarrhea for a year's duration. Would frequently faint at stool when constipated. Extremely nervous and despondent, and suffered constantly with easy fatigability. All laboratory work was negative and the physical examination revealed no pathology. She tried the methods of treatment prescribed by us for a while, proceeded to get no better, and then went to Baltimore where Friedenwald studied her in the hospital for six weeks. One of his treatments was an extensive psychoanalysis. She improved for a while, but upon her return home she soon lapsed into her previous symptomatology. In the meantime she had had another child. In July, 1926, she was examined by another physician in the clinic, giving the same line of symptoms that she had before. An abdominal section was decided upon, due to a mass in the right iliac fossa and a retroflexed uterus. The uterus was suspended and a cystic ovary removed. The colon was found to be rotated with the cecum pulled nearly to the mid-line and attached by adhesions at the appendix. In addition to this there was an organized band of adhesions from the center of the ascending colon, attaching it to the psoas muscle, making out of it an almost perfect letter S. This cord was cut and tied, the cecum freed, and the appendix removed, the colon immediately returning to its normal position. The gall bladder, duodenum, and head of the pancreas were found to be normal. Surely this colonic pathology in which the organ had been rotated on its long axis and then bent and curved into an S was sufficient for her disturbance. We congratulated ourselves and the patient, and in our own minds gave Friedenwald the laugh. She made an uneventful recovery and stayed well about a month, the same symptoms then becoming exaggerated. The diarrhea was so intense and the pain so great that opium had to be resorted to frequently, which controlled only the tenesmus and not the frequency. In spite of the attacks the young lady lost none of her beauty and engaged in amateur theatricals and various social activities between periods of exhaustion. With-

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in the past year her marital difficulties which had been unknown were ended by a judge. She went into a gainful occupation, became immediately well, and has suffered no attack since.

One cannot say that this was a defensive reflex against the antipathy to her husband, but was rather an emotional reflex, influencing intestinal peristalsis. Nor could we say that this young woman was a psychopath, but rather the unconscious victim of emotional reflexes.

ALLERGIC DIARRHEAS

Mild allergies are frequently seen where the individual becomes habituated to numerous stools daily, numbering from three to five, and looks upon mild gastric distress as a part of living, like profanity and prayer. Unless he is of an investigative turn of mind, or possesses an anxious temperament, he will never be interested enough to inquire into the cause of his discomfort. If the reason for the diarrhea is an allergy the discovery is usually made by himself, or he gets an immunity with spontaneous cure and is never treated by a physician.

We are all familiar with the milk diarrhea of infancy, where any modification of cow's milk or the dried and condensed forms will produce an intractable stool frequency; or in older children an abdominal pain, seldom with diarrhea. But the condition of food allergy producing abdominal pain in the adult is often not recognized. The reason for this is that he will become suddenly sensitive, remaining so over a period of months or years, and spontaneously regain his immunity, and continue taking the same proteins without event.

M. S. P., a physician 34 years old, taking a postgraduate course in Europe, was troubled for three years with recurrent attacks of cramping and diarrhea. He never associated it with the ingestion of crabmeat which he had eaten all of his life, and malted milks, which he had been taking frequently without bad results. At the end of the three year period he learned what was giving him the 48-hour diarrheas and he began to experiment with himself. There had been no week in this time when he was free from

one or more attacks. Whether these foods were taken separately or together had no bearing on the length or severity of the attack. At the end of the three year period he regained his immunity to the crab meat protein, but the sensitivity of the malted milk remained through a five year period. He can now take each or both with impunity.

Miss M. F., a private secretary, has had a diarrhea, recurrent or constant, ever since she can remember. She was kept thin and gaunt by the toxemia and the frequency of the stools, which was from six to eight daily, beginning from one to two hours following the ingestion of eggs or mayonnaise, containing eggs. As soon as all eggs and egg containing food were deleted from her diet she made an uneventful recovery.

SENILE DIARRHEA

This is often a symptom of nephritis in which the bowels take up the excretions of the kidney and may so perform for a long time, or it may be due to any form of sepsis or toxemia. To check the above forms of diarrhea suddenly is often fatal, since it will throw back on a failing organ a load they cannot carry, or the system will be charged with a load of toxins that have found their exit through the intestinal tract. If these are to be checked it must be gone about slowly, and then only when the diarrhea is exhaustive. The usual diarrhea met with in the aged, however, is due to the faulty character or too great frequency of meals, or excessive amount of food taken, because as age advances senile changes takes place in the stomach and intestines, with diminished metabolic activity. If the food intake remains the same with good appetite, severe strain is put on the digestive apparatus, resulting in frequent stools, or in those not so frequent, but larger than normal. This form of diarrhea comes on slowly, gradually increasing according to the intake, proportional to the amount of atrophic and metabolic change. The stools are normal in color, thin, but never watery, the discharges unaccompanied by straining, blood, or mucus. This phenomenon might be classed as compensatory at first, but as the condition is neglected the food becomes an irritant to

the intestinal tract, putrefaction sets up, the discharges become watery, brown, offensive, and more frequent. The individual becomes ill, due to the absorption of toxins through a weakened, congested intestinal wall. Along with unknown disturbing changes in the succus entericus the gastric secretions show a diminution in HCL with a concurrent slowed emptying time and fermentative changes.

For treatment of this condition regulate the food intake as to quantity and frequency, making the meals as far as five hours apart. If there is macroscopic undigested food this should be eliminated, or if there is a digestant for this type of food it should be supplied. Treatment should be initiated by a saline cathartic, followed by a whole day on buttermilk and orange juice, given alternately every two hours; this should be followed by a lowered proteid and carbohydrate diet. Should the stools be light colored and offensive, bile salts should be given.

MECHANICAL DIARRHEAS

These are just common enough to excite comment. Under the head may be listed those resulting from partial fecal impaction, or residue in the sacculations of the colon, explaining often the "constipation and diarrhea" type of intestinal toxemia. This form only ceases after the impaction is sluiced away by many water, putrid passages continuing for days. For treatment of this type of diarrhea the drastic purges usually used are valueless, if not actually harmful. It is much better to use a three pint enema of salt and soda water every hour until four are given. Each enema is to be retained as long as possible. If the enemas are given slowly so that the whole may be taken into the colon, the abdomen kneaded until the solution reaches the caecum before expulsion, they will act with a degree of specificity that is striking. To illustrate an instance of mechanical diarrhea, the following cases is presented:

J. B., a vagabond, was sent by a philanthropist to the Highland Sanitarium, complaining of a

painless diarrhea of five weeks duration, with little tenesmus, blood or mucus, thin watery stools, containing flocculi of feces and epithelium. Physical examination showed a well developed and well nourished man, 53 years old, who was edentulous, and otherwise, no pathology. Blood examination showed no significant change, urinalysis was negative. In preparation for a barium enema a two ounce dose of castor oil was given the night before. The medication resulted in profound purging, so the patient stated. On the morning of the roentgen-ray examination enemas were given until the return flow was clear, the number required being three. Before sending him to the roentgen-ray department the patient was sigmoidoscoped. The instrument was finally passed under the vehement protestation of the victim, who constantly begged that the weapon be removed, as something was about to happen, and it did. He evacuated a pint of huckleberries, the filling of a pie that he had wolfed down five weeks before. Roentgenogram showed a dilated rectum and sigmoid but where the timid huckleberries were hiding will always be a mystery. The patient was discharged in four days as cured, without further treatment.

GASTROGENOUS DIARRHEAS

Probably this is the most widely acknowledged and commonly recognized form of a continued non-specific diarrhea. By the mere fact of there being no free HCL in the stomach, and a total acidity not higher than 10, true achylia gastrica is not proved, since the simple psychic strain of a test meal may have to do with gastric secretion. It may also be absent in certain debilitating diseases, such as tuberculosis, malignant disease, catarrhal colitis, and chronic pancreatitis. When the condition of the patient improves in these conditions, the gastric secretion will again approach normal, the achylia being but a symptom and not an entity. The mere absence of the HCL in the stomach does not cause a diarrhea, as is borne out by figures from various authorities which say that only 20 to 30 per cent of the achylia have a diarrhea. As a matter of fact, any diarrhea with an absence of HCL in which other factors have been eliminated as its cause and where hygienic, dietetic, and medicinal measures have been invoked, and still the loose bowel movements are not abated, but are stopped promptly with the giving of large

doses of HCL, we must believe that it was the disordered nature of the gastric secretions which produced this diarrhea. Both defective secretion and defective motility favor fermentation in gastric contents and lead to the development of irritating organic acids and gases with a great increase of the bacterial growth. It is known that a hyper-acid stomach will not produce a diarrhea, but constipation is usually the result. HCL is the sheet anchor in the treatment of this common and trying condition. Our method of giving it is to use a teaspoonfull of the U. S. P. dilute muriatic acid to the juice of an orange, three times daily. It is well to fill the glass with water, sweeten to taste and drink a third of the glass before the meal, sip a third during the meal, and finish the glass after the meal. We usually give Parke Davis' pancreatic tablets as there is often an associated diminution of pancreatic function with the achylia. It is surprising how quickly the diarrhea is abated or cured, and with it other distressful symptoms such as myalgia and neuritic pains.

PANCREATIC DIARRHEAS

Disease of the pancreas is often associated with constipation, but everyone is familiar with the tremendously large greasy, grayish-white stools of an advanced case of pancreatitis, accompanied by great emaciation and cachexia. The stools are so large that the patient wonders from where so much fecal material can come. But in the milder cases, and early in the disease there are no such clear and distinct signs and symptoms. The disease begins insidiously and the history elicits a story of vague digestive disturbances of several years duration. To these may be added symptoms that suggest cholecystitis, or gastric and duodenal ulcer. The pain in chronic pancreatitis does not have periodicity or relationship to meals, but will occur all through the day, expressing itself as an ache or hurt in the epigastrium, usually to the left of the midline, often with definite tenderness to pressure. There is a

diminution of the enzymes with the character of the stools varying according to the variance in the carbohydrate and fat splitting ferments present. Since the procuring of the duodenal contents by the method described by Einhorn with the duodenal tube has been perfected a definite diagnosis of pancreatic dysfunction can be made, and if these ferments are there in normal quantities it is sufficient evidence pointing against pancreatic disease; however, a constant absence or diminution of trypsin, steapsin, or diastase is sufficient to indict the pancreas. The stools of a mild pancreatic diarrhea will occur in the morning, be two or three in number and each larger than the morning stool would be. The appearance of fats and perhaps undigested animal tissue is visible to the eye and very evident under the microscope. The patient is not very ill, but invariably has a sallow, pasty look, and complains of almost constant abdominal distress, not amenable to the alkalies or belching, but is somewhat relieved by the stools.

Mrs. C. L. M., 42 years old, came to the clinic complaining of a diarrhea of six years duration, morning in type, with a daily fever ranging from 99.4 to 100°, of four years duration. She was diagnosed duodenal ulcer in Denver and was so treated without relief of symptoms. She had a tonsillectomy, appendectomy, and hemorrhoidectomy, and extraction of all suspicious teeth. She had had a negative tuberculin test and repeated roentgen-rays of her chest were negative. A complete gastro-intestinal examination demonstrated the only pathology to be that the descending colon had an absence of haustration, and the ileo cecal valve was incompetent. A Graham-Cole examination of the gall bladder showed a very small gall bladder shadow but with good function. A fractional examination of the stomach contents showed a very low total acidity, the highest being 17 at the end of the first hour. The free HCL was 10 the first half hour and was absent in 1½ hours. Examination of the stool showed a considerable amount of mucus, many undigested food particles, many fatty acid crystals, many neutral fats and considerable amount of soaps. Examination of the duodenal contents showed a diastatic activity of 60. Another examination of the duodenal contents showed no amylitic activity at the end of three-quarters of an hour. Following the ingestion of fatty meals for three days neu-

tral soaps, fatty acid crystals, and neutral fats were found in large quantities, the diarrhea being increased. Chemical analysis of blood and urine showed nothing significant, and blood counts and Wassermann were negative. A diagnosis of diminished gastric and pancreatic function was made and she was put on a bland diet, colonic massage was instituted, she was given two Parke Davis' Panteric tablets with her meals with large doses of dilute HCL. As long as she is taking her substitution therapy, restricting the fats in her diet, she improves and feels quite well, but when it is left off her diarrhea and abdominal discomfort returns.

It would seem that with the array of diarrheas just gone over and the multitude of those that have not been mentioned that when a case of loose bowels comes into the office that the doctor would fly away in a panic and not even attempt to definitely conclude as to the etiology. But there are certain routine measures that should go with each examination. The most essential thing of course is a history and a complete physical examination. When this is done a protoscope should be used to eliminate that most frequent site of the etiology of the diarrhea—the first eight inches of the colon. By this method one can usually eliminate colonic tuberculosis, amebiasis, catarrhal colitis, idiopathic ulcerative colitis, simple ulcerative follicular colitis, proctitis, and amyloid ulcer. If the proctoscopic examination is negative one may be assured that the condition is due to either functional or organic disturbances in the stomach, pancreas, reflex or chemical irritation in the small intestine. A fractional gastric analysis is essential in all chronic diarrheas. If one is still at a loss, after study of the gastric and duodenal contents, roentgen-ray examination will sometimes be of benefit. However, the use of the sigmoidoscope and the stomach tube, with the history and physical examination, plus a store of horse sense and good judgment is sufficient armamentarium to insure a reasonably accurate diagnosis.

DISCUSSION

Dr. Donovan C. Browne (New Orleans, La.):
Dr. Douglas' paper certainly deals with a timely

subject and I wish to congratulate him on his handling of this very difficult subject; one which has been sadly neglected and upon which much work is yet to be done. To my knowledge there is no work at present which adequately deals with this subject or even gives a comprehensive classification.

I am quite interested in the handling of the gastrogenic diarrheas, and I wish to stress the fact that all achylas do not develop diarrhea, but the absence of this protective barrier often allows infection and various organic acids to pass into the duodenum and a duodenitis may result from whence the process is carried to the pancreas and biliary tract, it is quite often that we find these conditions co-existing and probably accounts for many of the failures to get relief by simple administration of hydrochloric acid. The pathology has extended beyond the altered gastric secretion and must be dealt with also if results are forthcoming.

A word of caution, I believe, is justifiable concerning "Nervous Diarrhea." The effects of emotional state upon the intestinal tract is definite, but it should be borne in mind that any patient who has had a diarrhea for months is apt to be somewhat upset and under tension, and before a diagnosis of nervous diarrhea is made, a most careful and exhaustive study should be instituted. It is laxness in this respect which leads to many mistaken diagnoses, neurasthenia.

Probably the most interesting phase of his paper to us just now is the allergic diarrheas. This is not a new subject, of course, but it is sure to demand our attention. It has been long recognized that various foods may produce diarrheas in certain susceptible people. Pediatricians are far in advance of workers in other fields, in this respect. They take cognizance of the food sensitizations and seasonal occurrences of certain forms. If it is possible to produce a hyperemia and congestion in the respiratory tract by contact with certain seasonal pollens. It is certainly plausible that a similar condition may be produced in the G. I. tract by foods either seasonal or otherwise. Certainly this phase of diarrhea is worthy of more consideration and work.

We have recently seen cases of ulcerative colitis with diarrhea which show seasonal recurrences, clearing up entirely at other times.

Dr. J. E. Knighton (Shreveport, La.): I enjoyed Dr Douglas' paper. I have heard Dr. Douglas read several papers, and in his characteristic, rather poetic and humorous way he has brought to us the lesson of his paper in such a

way that it is certainly very impressive. He covered the various steps of his paper in such a splendid way that there is not very much left to say with reference to the actual discussion of those particular heads.

The thing I should like to emphasize is that when you have determined that a diarrhea is non-specific in the sense that the essayist pointed out, you must not come to the conclusion that because it is non-specific you may not get to the bottom of the condition and determine what is the real etiology in the case.

Every case of chronic diarrhea, whether it be specific or non-specific, has a cause.

So that is the plea I want to make, and the thing I want to emphasize. Let us not get the impression that when we have come to the conclusion by our investigations that it is none of the well-known specific diarrheas, that we are helpless to find what the real cause is.

Dr. Luther Longino (Minden): I want to say that I enjoyed very much the paper read by Dr. Douglas on *The Non-Specific Diarrheas*.

In this connection I would report the case of a very stout, healthy, married young man, who came to me some time ago for treatment of an annoying diarrhea, that would come on from time to time without any special or apparent cause.

I made the usual investigations to determine the nature of the trouble but still could not account for those periodical diarrheas. This young man spent only part of his time at home during the week and part out in the country, but it finally developed that the days he stayed at home he suffered from the diarrheas, but the three or four days spent out in the country his diarrhea was very much improved.

The further study of the case led to domestic unhappiness in the home and forces us to accept as the cause the mental response on the digestive tract as has been outlined above. I think it very important in all these functional diarrheas, that the psychic element be considered in these patients.

Dr. A. C. Eustis (New Orleans, La.): I am afraid we are getting along the same line regarding diarrheas that Dr. Johns spoke of regarding anemias. I think it is a mistake to speak of achylic diarrheas, nervous diarrheas, and so forth.

There is some cause for the diarrhea, as Dr. Knighton has said. Instead of classifying diarrheas as above mentioned, I classify diarrheas into specific and non-specific, dividing the non-specific into the irritative and eliminative. In my experience a vast majority of the hyperthyroid or achylic diarrheas are eliminative, i. e., an attempt of nature to remove certain offending materials.

I noticed in the nervous case cited by Dr. Douglas that he spoke of the offensive stools. Very often a putrefactive process is going on in the intestinal tract due to the presence of putrefactive bacteria which results in poisons being formed.

Some years ago in some experimental work it was possible to produce a diarrhea in dogs by the intravenous injection of certain of these amines, formed by putrefaction in the intestinal canal. These eliminative diarrheas are the attempts of nature to remove the toxic amines in the intestinal tract by diarrhea.

I think the treatment depends on whether it is an irritative or eliminative diarrhea.

In conjunction with the achylia, as well as with the pancreatic diarrheas, it is interesting to review probably a little of the chemistry that goes in these cases. It is well to remember that the collagen, which is the substance that makes up tendons of tough meats and coats every microscopic fiber of meat, is digested in the intestinal tract by the pancreatic juice only after it has been acted upon by free hydrochloric acid. In the absence of hydrochloric acid or pancreatic juice you get no digestion, and your meat fibers remain in the intestinal canal and undergo putrefaction, with the accumulation of toxins, producing an eliminative diarrhea.

The allergic diarrheas would be classed as an irritative diarrhea, and are caused by the irritation to the mucosa by an allergic substance.

Before closing, there is one question I should like to ask Dr. Douglas. He said he had a paroxysmal tachycardia, and I wondered what he was doing smoking a strong cigar.

Dr. D. N. Silverman (New Orleans, La.): I enjoyed Dr. Douglas' paper, and he certainly covered the non-specific diarrheas. I don't agree altogether with some of the statements that have been made.

Achylic diarrhea is quite often a very different condition from a pancreatic diarrhea. Because we have a diminution or absence of the hydrochloric acid in the stomach, it does not signify that we have pancreatic dysfunction, or pancreatitis. The achylia that is associated with pernicious anemia, for instance, may cause a diarrhea, and yet examination of the duodenal contents of pancreatic enzymes may show no diminution in their strength.

I certainly want to agree with Dr. Douglas in the statement that he gives large doses of hydrochloric acid. We find small doses of hydrochloric acid are of practically no benefit in stopping the diarrhea. Folin, of Harvard, was able to give tremendous doses, two to three tablespoonfuls by adding it to egg albumen, and after being swallowed it is liberated as free hydrochloric acid.

Very often the achylia and the pancreatic condition, or pancreatitis, are associated, and not infrequently are due to underlying chronic infection of the biliary tract. In such an instance, we have to treat the patient for both the achylia and the pancreatitis. On the other hand, treatment of achylia is rather simple but, on the other hand, it is rather difficult to relieve, much less cure, a diarrhea of pancreatic origin.

Dr. S. J. Couvillon (Moreauville, La.): I would like to ascertain from Dr. Douglas, that in mentioning the "specific causes" or diarrhea, won't you class malaria as one of the causes? I'm not sure, doctor, that you mentioned malarial infections as one of the main causes of "specific diarrheas" in your list of classification.

Dr. R. G. Douglas (Shreveport, La.): Just a moment or two to close.

I want to say, primarily, that we people in the country are doctors. We try to cure. I do admit with Dr. Browne and others that achylia and pancreatitis can be separated by the etiologic factors. We try to shoot both barrels, hydrochloric acid and the Panteric tablet gotten out by Parke Davis, the best preparation that has been gotten out in a great number of years.

Almost routinely we find evidence of the pancreatic deficiency, a fat stool, and since pancreatic activity depends on hydrochloric acid we give them together even though they be not associated, apparently.

As regards the three kinds of nervous diarrhea, I will say that this woman was carefully treated by us and the best men of Baltimore for a period of seven years. She finally came to operation and all the pathology was corrected. The colon was found to be rotated with the cecum pulled nearly to the mid-line and attached by adhesions to the appendix. In addition to this here was an organized band of adhesions from the center of the ascending colon, attaching it to the psoas muscle, making out of it an almost perfect letter S. This cord was cut and tied. We thought Fridenwald was on the wrong track and all would be well, but sometime afterward there was a recurrence of the symptoms.

This woman was having marital difficulties, but as soon as her husband settled half the estate on her, she broke away from the home life and took the three children with her. She is now selling life insurance and is not very grateful to any of her physicians.

As to Dr. Couvillon's question, I wish to say that I gained all my training in a heavily infested malaria district. Dr. L. T. Baker, who is present today, treated 534 cases of malaria with a demonstration of plasmodia 930 times in 13 months. In a paper we prepared at that time, about eight years ago, we mentioned diarrhea as one of the most significant complications in malaria that we have responding immediately without a dietary regime on intravenous or intramuscular doses of quinin.

The diarrhea of malaria is striking. First, you have almost a surgical abdomen, a good deal of tenderness and rigidity, and much vomiting. There is no doubt, if at that time we were in close contact with eminent surgeons, that we would have had many of these malarial bellies opened. We had to rely a good deal on medical treatment and judgment in the country, and almost invariably we tried out the quinin first. Within twelve or fourteen hours the diarrhea stops. At post-mortem I found the small vessels of the mesentery packed and infected with malaria plasmodia. Almost a gangrene in the fatal cases had already set in.

Dr. A. C. Eustis (New Orleans, La.): What I meant to say with respect to the treatment of the nervous cases was to cut down on the meat at the same time.

EPILEPSY AND EPILEPTOID CONDITIONS.*

E. McC. CONNELLY, M. D.,

NEW ORLEANS.

When we venture into the realm of epilepsy, we enter upon comparatively unknown, though by no means unexplored, territory. I have nothing new to contribute on the condition, nor do I intend to attempt a treatise on the subject as a whole, but I would like to present a few cases which seem of interest, and if you will bear with me for a few minutes I should like to summarize briefly the essential points of our present knowledge and conception, or conceptions, of the condition.

By epilepsy is usually understood a sudden loss of consciousness which is usually accompanied by convulsive movements and other characteristic phenomena and followed by amnesia. These seizures are divided into those symptomatic of some definite condition and those for which no cause can be found—idiopathic epilepsy. With this point of view in mind, the diagnosis is at once simple and at the same time most difficult. Simple, if we see the patient in a typical fit or can obtain a comprehensive description of a typical spell from a qualified observer and can definitely rule out all of the many conditions which may produce convulsions as part of their syndrome. Most difficult, because, in the first place, the seizures are by no means always typical and, in the second, they usually happen irrespective of time or place, therefore the chances of a trained observer being present are slight and to the uninitiated a fit is a fit and a rather alarming spectacle and seldom are the details noted with sufficient clearness for purposes of fine differentiation, so we are generally compelled to build up our case to a considerable extent on half observed facts and to some extent on surmise.

But our troubles have only just begun, for our point of view has not taken in the full situation. After the elimination of the convulsions which occur as part of the symptomatology of such conditions as brain tumor; brain abscess; cerebral arteriosclerosis; brain injuries; chronic lead poisoning; kidney disease; hysteria, etc., etc., and reducing our field to the so-called, true or idiopathic epilepsy with its grand mal and petit mal types of seizures, we have still to consider the great variety of states which occur as equivalents to the seizures, and in addition to grand mal, petit mal, and the various psychic reactions called epileptic equivalents, we may have certain types of migraine; possibly some forms of dipsomania; urticaria; edemas; sweating, etc., occurring as epileptic phenomena, and the differentiation of these various conditions is interesting, but difficult. And when we undertake the task of recognizing and distinguishing these conditions we are further handicapped by our extremely limited knowledge of the exact nature of the disease, if it is a disease, for if convulsions may be and are caused by numerous organic, toxic, and even functional conditions, are not all convulsive seizures symptomatic of some unknown condition rather than an entity in themselves? If this is the case, what is the cause and what is the pathology?

Space will not permit me to discuss the various theories which have been advanced as to the etiology. I can only say that we do not know the cause, that hereditary; alcoholism in parents; prenatal syphilis; neuropathic diathesis; parental influence; endocrine disturbance; and so on, cannot be sustained as specific causes. Indeed, if the seizures are symptomatic rather than a disease in themselves, it would be reasonable to suppose that the attacks are in reality manifestations of a number of causes rather than of any single one when the wide variety of phenomena which seem to be epileptic in nature are considered.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

Pathologically, we are no better off, and the vast number of investigations which have been carried out have never penetrated the veil of mystery which clothes the actual organic changes, if any, which are responsible. In fact, even though, because of the loss of consciousness, we concede the brain, as the seat of consciousness, to be the site of the lesion or lesions producing the condition, the actual centers involved cannot, at present, be demonstrated, nor have the investigations of chemical changes in the blood and so forth been rewarded with any greater success.

The following cases seem of interest to me as illustrating some of the difficulties in diagnosis and some of the variations in reactions:

Miss A. M., white female, aged 22 years. No occupation.

F. H. Nothing of consequence.

P. H. Normal birth, full term, twin baby. She had the usual diseases of childhood. Diphtheria at 10 years and scarlet fever at 12 years. Had one convulsion at a year old, cause undetermined.

P. I. In 1918, at the age of 13 years, she had a severe attack of influenza with a relapse. Following this and coincident with beginning of menstruation she began to have seizures. Seizures have become gradually worse and more severe. They are both nocturnal and diurnal and at irregular intervals, with a number of light spells between the severe spells. She has had a great deal of treatment—dietetic; various drugs; such as bromides and luminal; and a number of serums, including goat ovary. Her menstruation was very irregular and the goat serum had apparently regulated it; however, it was irregular again. When I first saw patient she had recently recovered from an attack of typhoid fever. During the typhoid she had no seizures, but they began again immediately afterwards. Patient suffers from very obstinate constipation. She was taking 6 grains of luminal daily.

On examination, general physical showed nothing of special note. She is poorly nourished, with long chest.

Neurologically: Pupils were markedly dilated, but reacted to light and accommodation. There was no nystagmus. Deep and superficial reflexes were present and equal. No sensory changes could be demonstrated. At times there were some twitchings of the muscles of the left arm.

Gynecological examination revealed an infantile uterus with some displacement. Serology has all been reported negative.

The psychic situation was bad, in that the mother and other members of the family never allowed the patient out of their sight. She was not allowed to participate in any of the usual activities of a young woman of her age for fear she would have a seizure. Even shopping trips were taboo. Her home was on a plantation where she did absolutely nothing and had no particular form of recreation or entertainment, nor any occupation. She was very much better whenever she was in the city and seemed to get worse when she returned to her home.

Luminal was continued and corpus luteum was given hypodermatically. Her diet was regulated and an effort made to clear up her constipation. With the apparent affect of typhoid in mind, foreign proteid was given.

Seizures seemed more or less unaffected by all of treatment. Appetite was unaffected and constipation continued, but menstruation improved.

During a course of a year and a half she was witnessed in a number of attacks which were not in any ways epileptic—she did not lose complete consciousness; had no clonic or tonic movements; and the attack lasted a considerable period of time, and, in my opinion, they were hysteroid in nature, and I felt that this opinion was confirmed after I had brought on several deliberately. The family was finally persuaded to allow her to lead a more normal life, going to parties, etc., and her improvement was marked. At the present time she has had only one light seizure in a period of about 8 months. She has put on weight; her entire mental attitude has changed and she is much better in every way, although her constipation persists in spite of all treatment.

Miss A. S., white female, aged 12 years, student,

F. H. Mother has had facial paralysis with a positive blood Wassermann and has received intensive treatment. Nothing of any other consequence in family history.

P. H. Nothing of special consequence.

P. I. About the middle of September, 1928, the patient had a severe convulsion, followed in the course of 6 weeks by 2 others. The first lasted about 20 minutes and was followed by a severe headache. The last was of about 15 minutes' duration. The patient's left leg would become numb and feel heavy, would flex on the abdomen and she would fall; she lost consciousness; on one occasion bit tongue; had tonic and clonic movements; but was not incontinent. After seizures she could not stand and had severe headache.

Mother stated that patient had had numb sensation in leg for 2 years prior to seizures.

On examination, pupils were rather irregular and seemed somewhat sluggish. Knee jerk seemed slightly less active on left. There was a scar on the tongue. Corneal anesthesia and pharyngeal anesthesia was present. Nothing else of note was found. Physically she had a subacute appendix. She was operated for this and had an uneventful recovery. Wassermann was negative; blood negative and feces negative.

When she was about 10 days post-operative she had a seizure which was witnessed by a nurse. She did not lose consciousness, was afterwards able to give full account of attack, and in every way it seemed a typical hysteroid episode.

Diagnosis of hysteria was made, as it was felt that the description of seizures by the family were probably tinged by their own fear of epilepsy. After discharge from the hospital, patient had two very mild seizures and there were several crying spells interspersed. She was put on small doses of bromide which controlled spells very well, and as soon as she was able to get about following operation her seizures stopped and she felt very much better. Patient was last seen in January. She was very much better and had had no seizures except on one occasion, when she became upset over someone breaking into the yard.

F. M. White male, aged 35 years, machinist.

F. H. Italian abstraction on father's side.

Nothing of consequence.

P. H. Born in New Orleans. Was always healthy. Received blow on head in 1914, but is vague about it. Used alcohol moderately, smokes cigarettes. Never used narcotics. Chancroid and buboes at 15 or 16 years. Gonorrhea in 1915. Patient went to fourth grade in school.

P. I. In 1915 he had some slight spells, when things would seem confused to him, but he does not think he lost consciousness. These attacks continued and became gradually worse until in April, 1920, he had one in which he fell and lost consciousness. A second occurred in June, 1920. He continued to have spells at intervals of about 3 months, but did not always lose consciousness, some spells only amounting to momentary dizziness. In March of 1922 he had a severe seizure and was unconscious 3 hours. He applied for treatment in April, 1922.

On physical examination he presented two scars in the left inguinal region and a scar on the penis. Nothing else of note.

Neurologically: His pupils were irregular in outline and sluggish to both light and distance.

Psychologically: He showed a mental age of 16.1 years.

Blood and spinal fluid Wassermann were negative, as were other laboratory tests.

During first residence of some eight or ten weeks he adjusted very well, once having an altercation with another patient, and he had no seizures of any sort. The diagnosis of epilepsy was not concurred in.

This patient has been more or less under supervision since 1922 and has had hospital observation a number of times and in a number of places. A number of his seizures were observed and the diagnosis varies in instances, but not as to epilepsy. The usual diagnosis was hysteria. A positive blood Wassermann was obtained on one occasion and anti-luetic treatment given. He drank heavily and was frequently involved in trouble. In hospitals he would have altercations with other patients and would sometimes be insulting and abusive towards nurses. Finally his general misconduct culminated in an attempt at suicide. This followed an alcoholic debauch.

After attempting suicide he stopped drinking altogether and subsequently became somewhat more amenable to discipline, but continued to have periods of days when he was surly, irritable, becoming abusive, quarrelsome, etc., but always seemed to remember the occurrences and was very contrite afterwards. The general trend was towards mental deterioration, and finally after several years he was observed in both petit and grand mal attacks as well as in attacks which seemed hysterical.

J. R. White male, aged 33 years, farmer.

F. H. Nothing of consequence.

P. H. His health was good in childhood. He sustained no serious injuries. He denied venereal disease. Denies use of alcoholics and drugs. States that he has had spells of unconsciousness since birth.

P. I. He has continued to have seizures and is unable to perform his work upon the farm because of them. He cannot give a description of the seizures.

On physical examination patient had had a hernia and a number of other conditions which had no bearing upon his seizures.

Neurologically: He had a tendency to drag his foot when walking and swayed in walking with eyes closed. He had a suggestion of a Romberg. His deep reflexes were exaggerated, but equal. His abdominal and cremasteric reflexes were diminished. There was no Babinski, but an exhaustible ankle clonus both right and left. No sensory

changes could be demonstrated. Pupils were equal, regular and reacted promptly and well to light.

Mentally: He was very dull, but showed no evidence of psychosis. Blood and spinal fluid Wassermann were strongly positive.

He was observed in several epileptic seizures.

Summary: This patient has been more or less under observation for several years. He has had intensive anti-luetic treatment, but has grown progressively worse from a physical standpoint. His epileptic attacks, however, are not quite as frequent now as when he first came under observation. If the history is reliable in this case, he is an epileptic who has developed cerebro-spinal lues in addition.

E. C. Colored male, aged 33 years, tailor.

F. H. Reveals nothing of note. Nothing of consequence elicited in P. H. and history as to the onset of seizures is very vague.

Patient was admitted to hospital for heart lesion, and during residence he suddenly became acutely fearful; was very hysterical; ran and hid, said someone was trying to kill him. This episode lasted several hours and patient cleared up completely. He denied the use of alcohols or drugs, but cocaine was suspected. He was later discharged to his home. In three months he was returned with the history of having attempted to attack his wife with a hatchet. He was quiet, well behaved and co-operative in every way. He denied having attacked his wife. After a short period of residence under very close observation he had an episode during which he suddenly became very much confused and was fearful, agitated and disturbed. Said someone was trying to kill him, etc. This cleared up in the course of a few hours and patient had amnesia for the attack. Later he had another attack in which he became confused, wandered away, and upon his return had no recollection of going, where he went, or why.

Nothing was found in physical examination to account for attacks and they seemed of undoubted epileptic origin.

Mrs. L. B. White female, aged 22 years, housewife.

F. H. One sister epileptic. Nothing else of note.

F. H. She had the usual diseases of childhood, but no serious illness or injuries. She has had severe attacks of pain in side (inguinal region) since she was 9 years old. She began to menstruate at 15; never had any pain but was irregular. She has had one pregnancy.

P. I. At 19 she began to have spells. The first occurred at the end of her menstrual period. Since then spells have occurred two or three days before her menstruation each month and are both nocturnal and diurnal; she will fall; lose consciousness; bite tongue; froth at the mouth; has convulsive movements lasting a few minutes. Afterwards she feels weak and goes to sleep. She had no seizures during her pregnancy, but they recommenced a short time after her baby was born.

Examination showed nothing of special note. Blood and urine were negative.

DISCUSSION.

Dr. C. S. Holbrook (New Orleans): Dr. Connely has brought some very interesting cases of epilepsy for study, and I believe we find only unusual cases of epilepsy to be of much interest. The cases of the usual type one frequently sees, which are always distressing, but from the diagnostic point of view they don't give a great deal of trouble as a rule.

One of the most difficult problems that we have is to determine whether cases showing convulsions should be considered epileptic or not. There is danger in making a diagnosis of epilepsy because we frequently feel at a loss. We feel helpless after we do make such a diagnosis and tabulate the patient as an epileptic. Interest then is more or less lost in the case. A certain routine treatment has been determined which is followed out with more or less good results.

It is difficult to discuss Dr. Connely's paper because of the nature of the cases, but there are several things I want to mention that have to do with epilepsy.

In this country of ours there are about half a million epileptics. There is one case in about every 250 of population. Here in Louisiana there are between 3000 and 4000 cases of epilepsy. Many of these patients are able to get along in a fairly satisfactory way and make a living for themselves. Other cases are so badly affected, convulsions are so frequent and the resultant mental deterioration is so great that they have to be placed in institutions.

I am glad to say that the state now is getting in a position to take care of the epileptics, and Dr. Tompkins is developing a colony for epileptics where certain of these cases will get along.

There are many cases that have only one or two convulsions in a lifetime, and still they may be considered as epileptics.

I was looking up the literature on the subject and found that in the Surgeon General's office there were 3000 titles of epilepsies, various con-

siderations, showing the tremendous amount of literature or work that has been developed along that line.

There is one thing I had in mind which was very forcibly impressed upon me, and that is the frequency with which the diagnosis of epilepsy is made in the various decades of life. The vast majority of epilepsy will develop during the first and second decades. When individuals of thirty, forty or fifty years of age have convulsions, epilepsy is to be considered the least probable disease as far as diagnosis is concerned. When convulsions occur in individuals of ten, fifteen or twenty years of age, then epilepsy is probably the diagnosis. I don't mean an isolated convulsion associated with high temperature or infectious disease, but convulsions that recur at more or less frequent intervals, which had their beginning in early childhood, are very apt to be epileptic. Convulsions that begin after thirty are almost never epilepsy. Brain tumor, cerebrospinal syphilis, lead poisoning, and such things as that must be considered. The mistake, of course, and the harmful reaction to the patient is to make a diagnosis of epilepsy in these individuals who are getting along in years.

There is quite an interesting observation that Dr. Connely brought out, that in the case of fevers, such as typhoid fever, they are very frequently associated with a cessation of epileptic seizures. The patient frequently has a certain amount of immunity. Catabolism is so frequently disturbed during the infection or following operations that for a time there are frequently no convulsions. Almost any operation will appear successful because for a short time after the operation the patient ceases to have convulsions.

I saw an interesting case showing the frequency of epilepsy plus an infection plus syphilis. It was a young boy who developed epilepsy around the age of twelve. At the age of sixteen he developed syphilis. At the age of eighteen he developed meningitis, the regular cerebrospinal fever. He ran a difficult and protracted course from his meningitis and had high fever. After the infection cleared up all evidence of syphilis had entirely disappeared from the cerebrospinal system, as far as one could tell by all our laboratory tests, and he remained well for many months. He continues to have his epilepsy.

Dr. L. V. J. Lopez (New Orleans): I enjoyed Dr. Connely's paper very much, particularly where he brought out in one case about some of the surliness and personality changes.

In cases of epilepsy where some mental deterioration is taking place there is a character defect which almost stamps the epileptic. While it is true that you may find this same character con-

dition in some of the psychotics, the epileptic is a very egocentric, selfish, surly, irritable individual. What makes him that way is a difficult matter to say. Can we blame it on organic changes in the brain, or is it not more a medical-social reason? I am inclined to think the latter is more responsible for the condition. The epileptic is shunned, in some places almost as much as a leper would be. He is almost ostracized from society, and it is a difficult matter for him to secure gainful employment. The result is that he gets egocentric, over-religious and very often develops a true epileptic psychosis.

Dr. Connely brought out very clearly that there are three main manifestations of epilepsy: Unconsciousness, the convulsive state, and the amnesia following the episode.

I also wish to mention what Dr. Holbrook has called to your attention, that there are a great many conditions, after you see a patient who has passed the age of twenty, that you must consider when given the history of convulsions or if seen in a convulsive attack. Among these are brain tumors or abscesses; cerebral hemorrhages, thrombosis; embolism; cerebral arteriosclerosis or softening of the brain; cerebral syphilis, particularly general paresis; fractures of the skull; cerebral injuries; meningeal hemorrhages, meningitis of various sorts; parasites of the brain; congenital cerebral anomalies; various brain scleroses; and various chronic intoxications, such as chronic alcohol or lead poisoning. As you know, you also get convulsive states in eclampsia, diseases of the kidney, and the rare Adams-Stokes diseases, or heart block.

There has been a great deal in the literature as to what is the seat of convulsions. We will admit that the seat of consciousness is the brain, but there has been a great deal in the literature of debate pro and con as to whether this seat in the brain could be localized as to the cause of the convulsion. Some seem to favor the motor region of the brain due to the fact that you have the clonic phase of sudden motor discharges, the rhythmic motions. However, the clonic phase rather resembles decerebrate rigidity. Others think it might be in the mid-brain due to the fact that you have this clonic phase.

All sorts of theories have been advanced: Numerous pathological processes, various infections, anaphylactic reaction, endocrine imbalance, circulatory disturbances and changes of intracranial pressure; changes of hydrogen-ion; concentration in the blood. All of these theories simply go to show our profound ignorance of what epilepsy really is. It is only when we will know what a convulsion is that our knowledge of epilepsy will be complete.

Dr. Rena Crawford (New Orleans): I was interested in Dr. Connely's saying that attacks of epilepsy are prevented during illness. I have seen many severe cases of chorea that would be stopped by some intercurrent disease. I remember seeing one case of chorea where opiates had been given, and bromides. The child was tossing restlessly in bed, and was being given 90 grains of sodium

salicylate. The child had a salicylate poisoning. I think the chorea was stopped not by the drug, but by the toxicity formed by the drug.

Dr. E. McC. Connely (closing): I should like to thank the doctors for the discussion. I think possibly Dr. Crawford's observation of chorea is similar to those we made on epilepsy.

REVIEWS

SOME RECENT REVELATIONS CONCERNING RICKETS.*

ROBERT A. STRONG, M. D.

NEW ORLEANS, LA.

One of the astonishing things about the study of rickets is that notwithstanding the fact that it is one of the earliest nutritional and metabolic disturbances to be recognized and studied, little progress was made concerning its etiology until the past ten years. The older writings described the clinical course and gross pathology very well, but the theories as to the cause were most unique and interesting.

The widespread existence of the disorder has long been recognized as a most serious impediment to growth and development in early life, but when more modern methods of detecting it, such as the roentgen ray, were developed, it was soon found that its prevalence was even greater than the most careful observers ever supposed. Naturally this revelation stimulated more intensive effort, and within the past ten years pediatricists and biochemists have united to study the conditions responsible for the disease and to perfect a means to effect its cure and prevention. The progress which has been made is most encouraging and, there is adequate evidence to indicate that if the preventive measures, which have thus far been found to be successful, are generally used, the morbidity of rickets will be greatly reduced.

THE PATHOGENESIS OF RICKETS

As far as the study of rickets has progressed, there seems to be incontrovertible evidence that at least five factors have been demonstrated which influence the physiologic process in producing rickets. These are sunlight, exercise, calcium, phosphorous and finally the vitamin D.

SUNLIGHT

Notwithstanding the fact that the treatment of disease by sunlight appears to have been recognized in the days of Hippocrates, it has not been utilized to any extent until Rolier demonstrated its value in surgical tuberculosis about twenty-five years ago. While it is true that some of the older text-books of pediatrics in chapters devoted to the treatment of rickets have always emphasized the value of phosphorous, cod-liver oil, sea air and sunlight, it remained for Hess¹ to systematize the use of sunshine in the treatment of rickets. For a while the clinical improvement in cases of rickets treated by sunshine was apparent, but the actual reason for the improvement was not clearly understood. A theory that a relation existed between the nutritional factors spoken of as vitamins and sunshine seemed plausible and investigations were undertaken to determine if an actual relationship existed between these two factors. Independently of each other, Hess² and Steenbock³ and their associates began experiments that showed that various foods, such as oils, milk, cereals, flours, green vegetables and human and calf skin, etc., could be endowed with specific antirachitic properties merely by subjecting them to ultra-violet radiations. About the

*From the Department of Pediatrics, Tulane University.

same time Huldshinsky was working to the same end in Germany.

The important linking of these two potent factors concerned in nutrition opened up the possibility of eliciting the real nature of vitamins. Hess and Weinstock and associates⁵ and Windaus and Hess,⁶ by means of chemical analysis and spectral absorption tests, determined that it is ergosterol, a sterol closely allied to cholesterol, which is activated by the ultra-violet rays in this remarkable way.

The identification of this sterol, which had been known for many years to chemists, came about in a unique manner. Hess and his co-workers found that in irradiating vegetable oils and cod-liver oil, the antirachitic substance was always present in the nonsaponifiable fraction and lacking in the saponifiable fraction. As the main constituent of the nonsaponifiable fraction is phytosterol, the desirability of ascertaining if this substance could be activated was at once apparent. In this they were successful.

They next found that cholesterol, the long known lipid component of animal cells which corresponds to phytosterol in the plant cell life, could be activated also by the ultra-violet ray.

In view of the fact that this ray is so specific in the cure of and protection against rickets and that these radiations do not penetrate the skin, an experiment was devised to determine whether skin could be activated after it had been removed from the body. Skin was selected because it is known to be particularly rich in cholesterol, in fact, there is no other organ, except the brain, which contains a greater amount.

It seemed, therefore, probable that the cholesterol of the skin would respond to irradiation. To this end human skin and calf skin were irradiated and fed daily in 1 gm. *per capita* amounts to rats which were receiving a low phosphorous diet. A

control series received non-irradiated skin. The rats receiving irradiated skin were regularly protected from rickets, whereas the control animals developed rickets; the inorganic phosphorous of the blood followed a parallel course. In this way they seem to have justified an earlier hypothesis that the beneficial effect of solar rays or artificial radiations with ultra-violet rays in the treatment of rickets was due to the activation of this cholesterol so widely distributed in the skin. Subsequently, the use of ergosterol has supplanted all other sterols for irradiation.

A vast number of workers attacked the problem after the revelations of Hess, Weinstock and associates, and Steenbock and co-workers, and many contributions accumulated which amplified and corroborated the early discoveries. Conspicuous among the contributions was the work of the late Takahashi of the Institute of Physical and Chemical Research of Tokyo. This distinguished Japanese scientist perfected a substance known as biosterin, a purified vitamin, a preparation which he had isolated from cod-liver oil. A unique characteristic of this substance was that it was photoactive. In other words, it was capable of acting on photographic plates in perfect darkness. Shortly after Takahashi's death, Hamano⁷ continued the work and was able to prove that many of the substances, which Hess, Weinstock and Steenbock had shown were capable of acquiring antirachitic properties by ultra-violet radiation, were also able to act on photographic plates in perfect darkness. Thus it will be seen that the early studies which led to the activation of ergosterol by ultra-violet radiation were extremely interesting and consequently capable of inspiring enthusiasm.

IRRADIATED ERGOSTEROL

With the revelation of the fact that ergosterol could be activated by ultra-violet radiations, it naturally seemed possible to create a substance which would contain antirachitic properties in a highly concentrated form. It was believed that such

substances would protect infants successfully from rickets without the necessity of administering cod-liver oil or irradiating them with sunshine or quartz lamps. In this way there would be available at all times in a concentrated form all the factors normally derived from potent cod-liver oil and sunshine, both natural and artificial. Not only have several preparations of this activated ergosterol become available, but many of the manufacturers of infant-diet materials have irradiated some of their other preparations.

That irradiated ergosterol prepared according to the requirements prescribed by Steenbock under the license granted manufacturers by the Alumni Research Foundation of the University of Wisconsin, is as close a specific in the prevention and cure of rickets there can be no doubt. The development of this substance has long passed the experimental stage and it has taken its place as one of the most valuable preventive and therapeutic measures which we have ever had in combating rickets. Now that there are so many preparations of irradiated ergosterol available there can be no doubt that its use will become very widespread. If this use could be confined to conservative physicians alone, there would be little need of calling attention to the fact that this most potent substance is not without some danger. Unfortunately, this is not so for the reason that many mothers are now using it without the advice of a physician. It is therefore most important to remember that it was not long after irradiated ergosterol made its appearance in Continental Europe that evidence began to appear that it was capable of causing injury to young infants when improperly used. The first to report the ill effects of this substance was Pfannensteil⁸ and Kreitmar and Moll.⁹ These investigators observed that, when an excess of irradiated ergosterol was administered orally to rabbits and other animals, illness and certain pathologic changes occurred. Mice died within twenty days after

the administration of 1 mg. daily; rats and rabbits died within ten days with 10 mg. daily, and guinea-pigs died within thirty-six days after the administration of 50 mg. daily, while hens were immune. In those animals which died, the characteristic postmortem findings were an atrophic spleen and extensive calcium deposits in the arterial walls, heart muscle, stomach walls, lungs, kidneys and intercostal muscles, associated with secondary sclerosis of greater or less severity. It was obvious that changes of this character produced in so short a time were of a different order than the well-known arteriosclerosis that can be produced in rabbits after feeding them with cholesterol for five or six months, or with non-irradiated ergosterol for two or three months.

These findings were corroborated in this country by experiments conducted by Smith and Elvove¹⁰ in the hygienic laboratory of the U. S. Public Health Service. They showed that 2 mg. and upward of irradiated ergosterol given orally or intramuscularly to full-grown rabbits may prove fatal in a relatively short time. Doses of 1 mg. or less given three or four times a week seem to be well tolerated. Large doses of irradiated ergosterol produce a more or less marked hypercalcemia. Small doses produce variable results.

In addition to the danger of toxic action from irradiated ergosterol, warnings have been issued concerning the same effects from irradiated milk and other substances. Reyher and Walkoff¹¹ report the toxic action of ultra-violet irradiated milk and egg-yolk.

One of these authors (Reyher) had reported on March 28, 1927, in a paper before the Pediatric Section of the *Verein für innere Medizin und Kinderheilkunde*, the toxic action of ultra-violet irradiated milk on the heart and kidneys of experimental animals. These same authors discussed this subject in September, 1927, at a meeting of the *Deutsche Gesellschaft*

fur Kinderheilkunde in Pest. They showed microphotographs of severe injury to the heart muscle and kidneys, which they attributed to the feeding of ultra-violet irradiated milk. In their more recent paper they reported experiments which, unlike the previously performed with irradiated ergosterol were made exclusively with irradiated articles of food. These included raw cow's milk irradiated with a new apparatus which excluded oxygen and which was likewise taken in spontaneous amounts by the animals: Ultraktine (an especially irradiated dry milk) given as whole milk as much as the animal would take; daily doses of 0.5 gm. of Pleosoma (a commercial egg-yolk preparation specially irradiated); irradiated Plasmom, and finally, as a control, they tested animals with two drops of a one per cent Vigantol solution in oil, which is equivalent to 1 mg. of irradiated ergosterol daily.

Briefly summarized, the following pathologic changes were elicited in the animals. They were observed in all of the animals but differed in degree according to the variations in the length of time of the experiment. In the spleen a pronounced sinus endothelial catarrh was established. The sinus endothelium was involved in swelling, sloughing off, proliferation and cell destruction, and contained more or less abundant fine-grained iron pigment, as well as absorbed erythrocytes in the cell body, as an indication of the strong decomposition of the blood. The kidney showed the picture of a toxic nephrosis; the epithelium of the small urinary canals, especially in the coiled ones, was degenerated. In their lumen abundant hyaline casts were present. Extensive lime deposits had attached themselves to the necrotic epithelium of the small urinary canals, just as one is accustomed to observe in cases of subacute poisoning by sublimate of mercury. In the musculature of the heart there often appeared earthy points of degeneration which showed likewise a tendency to lime encrustation.

Superficially considered, the pathology caused by excessive vitamin feeding, for which the name *hypervitaminosis* has been suggested, would appear to be rather alarming. It should be borne in mind, however, that even the workers who report the ill effects found a rather wide difference between the therapeutic and toxic doses. Consequently, the margin of safety in the clinical use of irradiated ergosterol appears to be equally wide. It may be repeated therefore for emphasis that in irradiated ergosterol we have the most valuable preventive and therapeutic agent which has ever become available in the history of rickets. In utilizing it however, we should be ever mindful of the fact that this substance is so enormously potent that it cannot be used without careful discrimination as to dosage and that the patients receiving it should be under constant supervision.

SUN THERAPY

In the use of sunlight, artificial or natural, there are certain precautions which should be observed. Any idea that prolonged exposure is necessary for the purpose of healing or preventing rickets is entirely erroneous. If a quartz light is used, the initial distance is 80 cm. (2 feet) and the time of radiation is two minutes. The distance is kept constant and the time is continuously increased each treatment by two minutes until fifteen minutes are reached and then a period of radiation of fifteen minutes is maintained. The radiation should be made three times a week and the whole body should be irradiated; one-half of the radiation dose is applied to the front, the other half to the back of the body. This procedure has been found to be harmless in the average infant and is curative in most every case.

The curative effect cannot be judged according to the pigment of the skin. In a like manner, children whose skin is normally deeply pigmented must be intensely and longer irradiated. This necessarily must be left to the judgment of the physician.

In summer or in winter when natural sunshine is available, the exposure of infants to the sun has the same effect and the same time of exposure is usually followed. More discretion, however, is required and seasons vary the time of exposure very extensively. The danger of severe sunburn in certain types of skin must be guarded against carefully. The eyes of young infants must always be protected by suitable goggles.

Some time ago the seasonal variation of the antirachitic effect of sunshine and its effect on resistance to disease was studied by Brown and Tisdall.¹² Their experiments were conducted on Albino rats and they found that from the first of March until the middle of October the antirachitic effect of the sun's rays is much greater than during the other months of the year. They call attention to the value of "sky shine" which is the reflected rays from sky and clouds. This is analogous to the reflected sunlight from the sand at the seaside in summer. They found that "sky shine" has approximately from 50 to 60 per cent of the value of direct sunshine. An infant placed on the shady side of a street, therefore would receive approximately two-thirds of the benefit that it would receive if it were on the sunny side.

In the same study they investigated the value of the several quartz glasses and found that they admitted from twenty-five to fifty per cent of the effective rays as compared to ordinary glass.

VITAMIN D

It was formerly believed that any shortage of vitamin A in the young animal invariably results in the development of rickets. While this is true, the vitamin D seems to have a greater claim on the title of "the antirachitic factor." Both of these fat soluble vitamins are recognized, but the vitamin A seems to be concerned more in promoting growth, while the vitamin D is more generally believed to be the ricket-preventing factor. This information was

elicited largely by the experimental work on the irradiation of various food-stuffs which has been discussed previously.

With the possible exception of the irradiated ergosterol, cod-liver oil, which has been carefully tested physiologically on rats, is the richest known natural source of vitamin D. Second to this is probably cow's milk from cows receiving proper diet. In addition, other articles of food which have been irradiated by ultra-violet rays are sources of the Vitamin D.

Concerning cow's milk, experiments have proved that the vitamin A content of cow's milk is determined entirely by the nature of the cow's food, but prove, on the other hand, that the vitamin D content depends chiefly or entirely on the degree of exposure of the cow to sunlight. A cow kept in a dark stall yielded a milk poor in vitamin D, even when fed on fresh grass. The cow, therefore, does not manufacture any vitamin A, but simply passes into the milk such supplies as she receives in the food. On the other hand, the vitamin D in the cow's milk is chiefly manufactured in the animal's body, and the quantities of this vitamin taken in normal food are not sufficient to produce a milk rich in vitamin D. Doubtless, if the cow had been treated with cod-liver oil, and thus given an excess of vitamin D in the food, a milk rich in vitamin D could have been produced.

The practical importance of this conclusion is very great, for a large proportion of the cows that provide the milk of our urban population are stall-fed, and their milk must be assumed to be deficient in the antirachitic factor throughout the year. Moreover, these conclusions can be extended to nursing mothers, and it seems to follow that the milk taken by a breast-fed child will be deficient in the antirachitic factor unless the mother either gets a reasonable amount of exposure to sunlight or is given irradiated ergosterol or cod-liver oil. Children living in smoke-covered cities therefore receive very little vitamin D in

their milk throughout the winter, even when they are breast-fed. This deficiency will be compensated for if the child itself gets a reasonable amount of exposure to sunlight or if the child is given cod-liver oil or irradiated ergosterol.

IDENTITY OF VITAMINS

One of the most fascinating phases of the recent studies of nutrition has been the effort to identify vitamins. Incontrovertible proof has existed for many years that they are essential factors in every diet, but their true nature, like electricity, has never been clearly understood. Naturally, the intriguing problem of reducing them to tangible substances has attracted many investigators. So far the most logical substances known to organic chemists, which might prove to be vitamins, are phytosterol, cholesterol, carotin, chlorophyll and xanthophyll.

The work of Hess and his associates and Steenbock and associates with cholesterol and their conclusions concerning ergosterol has been discussed previously. The substance, in addition to these sterols, which has been most frequently suspected of being a true vitamin has been carotin which is the yellow coloring matter found principally in carrots but which is responsible for the yellow color of butter and egg yolk. In studies that were made on butter, it has been noted that the coloring matter varies considerably in different samples and that this variation is seasonal. Butter made in the late spring and early summer is usually richer in this agent than that made in other seasons. Moreover, it was observed that butter loses this substance when kept in cold storage for one year and even less.

What was probably the most profitable observation, however, was that when butter lost the coloring there was evidence that its value in supplying the fat-soluble vitamin A was reduced greatly. This led to the belief that there might be a relationship between the color and the vitamin value of butter.

With the knowledge that carotinoids were responsible for the characteristic color of butter, Steenbock and his associates advanced the hypothesis that carotin and the fat-soluble vitamin A were identical.

For a time little, if any, further attention was paid to this phase of the study of nutrition, and the only impression that was left was that this yellow pigment was closely associated with the vitamin A, but final proof that the two were identical was never suspected.

Recently, however, three Swedish investigators¹³ have reported the result of their chemical and biologic studies of carotin. They express the belief, according to the *J. A. M. A.*, that the early equivocal results were due to the lack of appreciation of the necessity of vitamin D in the experimental ration. Utilizing modern technique "they obtained growth with as little as 0.005 mg. of crystallized carotin in animals which had been depleted of vitamin A. Furthermore, this pigment gave the blue color with antimony trichloride, heretofore alleged to be specific for vitamin A."

Apparently these investigations justify these authors in reaching the conclusions that carotin and the carotinoid pigments are responsible for the vitamin A in the food-stuffs in which it is known to be present. This, of course, supplies additional evidence and corroborates, in a measure, the studies which have been made previously. It does not, however, prove conclusively that carotin and vitamin A are identical. Whether or not vitamins will ever be reduced to tangible substances cannot be said, but the studies which have led to the preparation of irradiated ergosterol and those which link carotin and the vitamin A are long steps to this end.

RICKETS AND DENTAL CARIES

It has always been believed that the factors responsible for the development of rickets likewise played a part in the production of carious teeth. This led the Mellanbys¹⁴ of England to undertake experiments about five years ago, and they proved

that puppies, in which rickets had been induced by the deprivation of fat-soluble vitamins, showed imperfect dentition. The teeth of such animals were small and irregular, and frequently discolored, while histologic examination showed that the development of both dentine and enamel was defective. Further research established beyond doubt that this imperfect dentition in puppies was due to the lack of vitamin D. A comparison between the histologic characters of these abnormal teeth produced by vitamin lack in dogs, and the structure generally accepted as normal for the human tooth, showed that there was a remarkable similarity between the two. This resemblance naturally suggested that a partial deficiency in vitamin D might be a cause for the dental imperfections that are almost universal in civilized communities. This conclusion was supported by examination of the deciduous teeth of children.

No fewer than 1,036 of such teeth were examined histologically. The general belief has been that the majority of deciduous teeth are normal, but Mrs. Mellanby showed that by far the greater number of them present signs of defective development of dentine. Moreover, the teeth obtained from the dental clinic were more defective than teeth from children of middle-class families. This fact supported the view that defective dentition was due to a diet deficient in fat-soluble vitamins, for one of the chief faults in the diet of the proper classes is the inadequate supply of animal fats. Recently a report of the continuation of this study was made by Mrs. Mellanby and Pattison.¹⁵

In this report attention is called to the fact that, when children were given cod-liver oil, dental caries did not spread in their teeth as rapidly as it did in the teeth of control groups which did not receive the oil. Cod-liver oil contains, however, the fat-soluble vitamins A and D, and recent work has indicated that vitamin A plays an important part in maintaining the resistance of the body against infection. This

made it important to determine which of the two vitamins played the chief part in preventing caries in the human subject.

In the work just reported, only one vitamin was administered, namely, vitamin D in the form of irradiated ergosterol. The authors conclude that the addition of this vitamin has a definite effect in checking the initiation of new carious points and in diminishing the spread of old carious points.

The number of children under observation in this latter study was small, and the authors themselves realized that the results were more or less inconclusive. Nevertheless, the early experiments of Mrs. Mellanby on puppies and the continuation of her work with children formed a chain of evidence which established very strong evidence that the progress of dental caries is largely determined by deficiency of vitamin D. In any event, no one has ever adduced any evidence of greater promise or offered any suggestion of more effective means of controlling caries.

These studies on relation of rickets to dental caries will be interesting to follow through, and in view of the fact that there is now such a widespread utilization of preventive measures against rickets, it will be interesting to note whether or not there will be any remarkable decrease in dental caries in the next generation.

CONCLUSIONS

Some of the impressions gained from the foregoing review of the progress which has been made in studies related to rickets, and other recent contributions not especially included in this review, are:

1. Any doubt concerning the value of ultra-violet radiation derived from direct sunshine, "sky shine," or quart lamps as a "rickets-healing" or "rickets-preventing" measure is no longer tenable. The value of these measures has been definitely proved.

2. The value of irradiated ergosterol or "captured sunlight" in the prevention and treatment of rickets has been proved sufficiently so that it may be almost characterized as a specific. It has, however,

been shown that this substance is so enormously potent that the danger of causing injury to infants receiving it is very great, unless it is carefully controlled and the dosage kept at approximately 1 mg. or less given three or four times a week. Larger doses of irradiated ergosterol may produce hypercalcemia and calcium deposits in certain tissues and organs. Confidence, however, should not be shaken in the unquestionable therapeutic value of irradiated ergosterol and it should be used not only in all artificially fed children, but in those who are breast-fed as well. It may be given also to nursing mothers for the purpose of increasing the vitamin D content of their milk.

3. It has been shown that the radiation of milk and other food-stuffs is not without some of the dangers attributed to irradiated ergosterol, and it is believed that the activating of food-stuffs should be discontinued for the reason that the dosage of irradiated food-stuffs cannot be controlled as definitely as the dosage of irradiated ergosterol.

4. While both fat-soluble vitamins A and D are essential factors in the prevention and cure of rickets, the vitamin D seems to be the specific antirachitic factor.

5. Identity of the vitamin A or D has not been definitely proved, but considerable progress has been made in establishing a relation between ergosterol and the vitamin D and carotin and the vitamin A.

6. The Mellanbys seem to have finally proved that carious teeth are frequently the result of the same factors responsible for the development of rickets.

7. That rickets is more prevalent than has ever been supposed before modern methods of eliciting it were perfected. Moreover, evidence is rapidly accumulating to indicate that breast-fed infants are more frequently affected with rickets than has been believed prior to four years ago.

9. It has been shown that rickets can be very much reduced by improving the diet of the mother during the prenatal

period and period of lactation, although rickets is chiefly a postnatal condition.

A summary of the measures thus far approved as being desirable for the prevention of rickets would be to encourage breast-feeding, improve the diet of the nursing mother, improve the hygiene of the mother and child, encourage exposure of the child's body to the sun rays, where possible, either in the open or through quartz glass in the window lights, or three treatments a week with a quartz sun lamp and systematic and regular exercise. In addition to this, irradiated ergosterol should be administered to all children during the first year of life, particularly during the winter months. Its use should be carefully supervised by the physician.

If such measures are consistently applied, there can be no doubt that there will be a material reduction in the morbidity of rickets.

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MORE NOSTRUM ADVERTISEMENTS.

Two months ago we called attention to the large number of patent medicine advertisements that are appearing in some of the newspapers of the State, and more particularly to some glaring examples of the type of patent medicine advertisements that are being published in New Orleans. Last night's edition of one of these contemporaneous sheets contained nearly a dozen advertisements of nostrums. Some of these so-called remedies could not be labelled bad or dangerous except for the fact that they are secret preparations inherently dishonest in their claims, but probably not capable of doing very much harm. On the other hand, we can not possibly conceive of a more wretched example

of dishonorable handling of advertising than to publish statements to the effect that gall-stone colic can be treated successfully by some remedy or another of which nothing is known, that high blood pressure can be cured by taking medicine internally, that a goiter may be removed by drugs, that the pangs of child birth can be controlled by local application on the abdomen, that bladder irritations irrespective of the cause can be cured by medicine taken by mouth. Aside from the question of ethics concerned in publishing such statements even under the guise of advertisements, one wonders how the readers of an occasional conscienceless newspaper quite stomach some of the nasty, disagreeable, and obnoxious statements made in these advertisements.

HEALTH EXAMINATIONS.

County medical societies are gradually coming to appreciate the value of campaigns, such as have been conducted for the last two years by the Orleans Parish Medical Society, to encourage health examinations and to show to the laity how life may be prolonged. The largest county in the United States in point of view of population, that of New York City, through its incorporated medical society, is undertaking to carry through a campaign during the month of November which will show the public of their city the advantages of a complete and thorough physical examination every year. In carrying out the object they are using various channels of publicity, including full-page advertisements in such papers as the New York Times.

Although the direct benefits to be achieved by these campaigns can not be accurately evaluated, there is no question that they do a great deal of good in educating the intelligent members of a community to be health-minded. They show not only the benefits to be derived from the examination and what can be done to preserve health, but they also demonstrate

most conclusively that the medical profession is more deeply interested in preventing sickness than treating a patient after he has developed an advanced pathologic process.

SOY BEAN FOOD FOR CHILDREN.

Obstetricians and pediatricians are frequently annoyed and often are at their wits end because of their inability to give cow's milk to a small infant who is sensitive to the protein contained in this essential food substance. It is true that only a small number of babies ever suffer from milk allergy, but it is likewise a truism that if they do it is very likely to result in their dying of starvation. In order to get a protein which was vegetable entirely and without animal properties, soy bean was selected by Hill and Stuart*

*Hill, W. H. and Stuart, D. C.: Soy Bean Preparation for Feeding Infants with Milk Idiosyncrasy. *Jour. Am. Med. Assn.*, 93: 985, 1929.

as the most promising food to meet the protein requirements of the growing infant. Soy bean flour, to the extent of four per cent, is employed in their particular good preparation. Small amount of calcium carbonate and sodium chloride are added, and in order to raise the fat content sufficient amount of olive oil was added so that the diluted mixture contains three per cent of fat. A small quantity of barley flour is also added. The food that has been made from this formula is called sobee, and the author's report was gratifying results in the feeding of small babies with this particular preparation. Forty babies have been given sobee and they have all done well. In the children suffering from eczema the food is decidedly of benefit, and Hill and Stuart feel that it will be of considerable advantage to the practitioner to feed babies who have severe eczema on this particular food for a time at least.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR.

- | | | | |
|--------------|---|--------------|--|
| November 1. | Physiology Seminar, Tulane Medical School, 5 P. M. | November 20. | Charity Hospital, Surgical Staff, 8 P. M. |
| November 4. | Eye, Ear, Nose and Throat Hospital Staff, 8 P. M. | November 21. | I. C. R. R. Hospital Staff, 12 Noon. |
| November 8. | Physiology Seminar, Tulane Medical School, 5 P. M. | November 21. | Eye, Ear, Nose and Throat Club, 8 P. M. |
| November 8. | French Hospital Staff, 8 P. M. | November 22. | Physiology Seminar, Tulane Medical School, 5 P. M. |
| November 11. | <i>Orleans Parish Medical Society</i> , 8 P. M. | November 25. | <i>Orleans Parish Medical Society</i> , 8 P. M. |
| November 12. | Baptist Hospital Staff, 8 P. M. | November 29. | Presbyterian Hospital Staff, 8 P. M. |
| November 14. | Gyn. and Obs. Soc., 8 P. M. | November 29. | Physiology Seminar, Tulane Medical School, 5 P. M. |
| November 15. | Mercy Hospital Staff, 8 P. M.
Physiology Seminar, Tulane Medical School, 5 P. M. | | |
| November 16. | Hotel Dieu, 8 P. M. | | |
| November 19. | Charity Hospital, Medical Staff, 8 P. M. | | |

SECRETARY'S REPORT.

During the months of July, August and September the Society was in vacation, the meetings being resumed October 14th when the Third Quarterly Executive Meeting was held. At this meeting

reports of the Secretary, Treasurer, Librarian and Special and Standing Committees were read. Dr. Homer Dupuy presented a most interesting case of a man without a larynx. Dr. Oscar Bethea presented a paper on Eversion of the Tonsil.

At the meeting held October 25 the program was as follows:

Transfusion.

By.....Dr. Chaille Jamison
Discussed by Dr. M. J. Gelpi.

Observations of Foreign Clinics.

By.....Dr. Urban Maes
Plans and Functions of the New Hutchinson Memorial Building.
By.....Dr. C. C. Bass

The Secretary's office has written the various Senators and Representatives of Louisiana asking their co-operation in having a Diagnostic Center established here by the United States Veterans' Bureau.

This office has also endeavored to have the Times-Picayune stop the publication of the physician's name in the paid birth announcements.

The Committee on Periodic Health Examinations with Dr. Jerome E. Landry, Chairman, is formulating plans for the annual Longer Life Week which will be held during the month of December.

The Committee to select the orator for the annual Stanford E. Chaille Memorial Oration is headed by Dr. John A. Lanford, Chairman.

The following doctors were elected to Active Membership: Drs. Edgar Burns, Dyer J. Farley, C. J. Miangolarra, Geo. Chas. Miramon, Paul R. Meyer, Sam B. Saiewitz, Geo. L. Smith and Robert A. Strong.

TREASURER'S REPORT.

September

Actual Book Balance	\$1,200.12
Receipts	381.22
Receipts, Insurance	784.61
	<hr/>
	\$2,365.95
Expenditures	\$ 824.41
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Actual Book Balance	\$1,541.54

LIBRARIAN'S REPORT.

Three hundred and seventeen books have been added to the Library during the quarter. Of these 37 were received from the New Orleans Medical and Surgical Journal, 74 by binding, 183 by gift and 23 by purchase.

The work of the summer has been heavy. In addition to the current reference work the following lists have been added to our files.

Hospital records.

Recent investigations on epilepsy.

Carcinoma of seminal vesicle.

Vaccine therapy in children.

Pernicious anemia in pregnancy.

Encephalomyelitis following vaccination.

Congenital malformations in children.

Colectomy.

Angina pectoris and nerve supply to the heart.

Incidence of syphilis.

Potassium sulphocyanate in hypertension.

Miss Marshall was sent to the Medical Library Association in Cleveland, representing this Library and that of the Medical School. About sixty medical librarians were in attendance and the meetings were both practical and inspirational. Among the problems discussed were cataloging, care of unbound periodicals, insurance of libraries and methods of estimating values, student assistance, charging systems and rules for loan. Miss Marshall was elected Treasurer of the Association.

Donors for the quarter are:

Dr. Haidee Weeks

Drs. Samuel and Bowie

Dr. J. H. Musser

Dr. W. A. Lurie

Dr. E. L. King

Dr. S. J. Lewis

Dr. E. L. King

Dr. C. Jeff Miller

Dr. J. M. Perret

Dr. E. H. Walet

Milwaukee Academy of Medicine

American College of Surgeons

Rochester (N. Y.) Academy of Medicine

Newark Academy of Medicine

University of California Medical School

Boston Medical Library

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

NEWS AND COMMENTS.

The Seventh District Medical Society holds its regular meeting at Hotel Abbott, Welsh, La., September 12, 1929, Dr. Morgan Smith, President, presiding. Forty-two members from the Seventh District were present.

The following program was very interesting to all:

"The Stump of the Appendix," by Dr. Arthur Vidrine, New Orleans. "The Dislocation of Semi-Lunar Bone of Wrist," with Lantern Slides, by Dr. E. L. Irwin, New Orleans. "Infant Feeding," by Dr. John Signorelli, New Orleans.

Dr. D. N. Silverman, Associate Professor of Gastro-enterology with the Graduate School of Medicine of the Tulane University of Louisiana, addressed the South Texas District Medical Society at Houston, October 11, 1929, on "Chronic Ulcerative Colitis."

On August 12, 1929, Dr. D. L. Watson, of New Orleans, read a paper before the Clinical Society of the Presbyterian Hospital entitled "Intra Pulmonary Injections for the Treatment of Tuberculosis—Preliminary Report." At this meeting he exhibited cases and demonstrated the technic. On September 19, 1929, he read a paper on the Home Treatment of Tuberculosis with Intra Pulmonary Injections of Peroxide of Hydrogen.

Dr. Watson has organized a Tuberculosis Research Clinic for a thorough investigation of this line of treatment.

MEETING OF ST. TAMMANY PARISH MEDICAL SOCIETY.

On Friday night, October 11, at 8 P. M., the Society met at the New Southern Hotel, Covington, La., with the following doctors present: H. E. Gautreaux, L. Roland Young, J. F. Polk, F. F. Young, F. R. Singleton, J. K. Griffith, R. B. Paine, W. L. Stevenson, and N. M. Hebert. Dr. Lawrence R. Young, of Mandeville, was a guest of the evening. Dr. Cecil Lorio, Pediatrician of Baton Rouge, was the guest of honor and essayist of the evening.

The vice-president, Dr. W. L. Stevenson, presided in the place of L. Roland Young, President, who officiated as acting-Secretary. The matter of the examination of school children was discussed.

Dr. Lorio gave an excellent paper on "Infant Feeding, Diarrhea and Treatment." Statistics were quoted showing that the mortality rate in artificially fed infants in 6 per cent greater than those of mothers fed. Important points were stressed in artificially feeding infants. The sub-

ject proved most interesting and much discussion followed. Discussion was led by Dr. F. F. Young.

It was moved and carried that the next meeting be held in Slidell the second Friday night in November.

L. ROLAND YOUNG,
Pres. and Acting Sec.-Treas.

FIFTEENTH NATIONAL CONFERENCE OF CATHOLIC CHARITIES.

During November 10-14, will be held the National Conference of Catholic Charities in this city. New Orleans is most fortunate in having this body of public minded and public spirited citizens meet here for an interchange of thought and discussions regarding the problems coming under their heading.

There is extended, through this medium, from the National and Local Chairmen of Committee on Health, Doctors Maud Loeber and Walter J. Otis, an invitation to Superintendents of Hospitals and Sanitariums, and physicians throughout the State, likewise those interested in Social Service, Public Health activities and School curriculum to make every effort to attend this conference.

Speakers of note are meeting with the Conference to give their interpretive analysis of the work being done in their localities. The program for Wednesday, is especially interesting. The topics to be discussed are:

Hospital Facilities for the Care of Persons of Moderate Means.

Some Aspects of Group Medicine With Special Reference to the Pay Clinic. Mr. Michael Davis, Julius Rosenwald Fund, Chicago, Ill.

Medical Social Service and Hospital Rates. Sister Helen, Mercy Hospital, Baltimore, Md.

At another meeting the Problem Child will be discussed.

Other topics of interest will be the Pre-Delinquent Child in Institutions, the Position of the Laity in Organized Social Work, by Dr. Charles P. Neill of Washington, D. C.

There will be round table discussions held on specially selected topics. Any Superintendent, Physician or Social Worker attending through this medium, who desires to confer with a specially directed group on any topic will please make it known to the Local Chairman on arrival at Registration Headquarters, Roosevelt Hotel, New Orleans, Louisiana.

WEEKLY HEALTH INDEX.

During the week of September 21, the death rate in the City of New Orleans had a more satisfactory death rate than for many weeks. In this particular week there were 120 deaths with a rate of 14.6. The Government report of the following week, that is, the one ending September 28, showed that there were 145 deaths with a rate of 17.7. The week ending October 5 was practically the same as the preceding one, the total deaths being 141 with the rate of 17.2. Of the 141 deaths in this particular week, 19 were in children under one year of age, occasioning an infant mortality rate of 94. In the corresponding week of last year the death rate for all deaths was 18.0.

UNITED STATES CIVIL SERVICE
EXAMINATION.

The United States Civil Service Commission announces an open competitive examination for the position of associate medical statistician, \$3,200 a year. A vacancy in the United States Veterans' Bureau, Washington, D. C., and vacancies occurring in positions requiring similar qualifications, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

NEW ASSISTANT DIRECTOR OF MULFORD
LABORATORIES.

A recent announcement has been made of the appointment of Dr. Jose Zozaya as Assistant Director of the Mulford Biological Laboratories. Dr. Zozaya, a native of Monterrey, Mexico, was educated in the United States. Under a fellowship from the Rockefeller Foundation Dr. Zozaya studied the organization and work of public health laboratories and agencies. He was then called by the Mexican Government to organize the Institute of Hygiene in Mexico City. He became the Director and is credited with the planning and building of the Laboratories of the new Institute of Hygiene of Mexico and with the organization of its activities.

MALTBIE RESEARCH FELLOWSHIP.

Announcement has been made that the Maltbie Chemical Company, of Newark, N. J., has contributed a grant for a research fellowship for the coming year to the Philadelphia College of

Pharmacy and Science. The research work to be done under this fellowship will be fundamental in character and will cover a study of the toxicity, pharmacology and bactericidal efficiency of creosote, creosote compounds, and constituents of creosote. The work to be done under this fellowship follows the chemical researches on creosote of the past year under the Maltbie Chemical Company Fellowship of Princeton University.

UNITED STATES PUBLIC HEALTH
SERVICE.

Sanitary Engineer H. N. Old is relieved from duty at Memphis, Tenn., on or about Oct. 1, and assigned to duty at New Orleans, La.

Associate Sanitary Engineer E. C. Sullivan is relieved from duty at Memphis, Tenn., about Oct. 1, and assigned to duty at New Orleans, La.

Surgeon C. V. Akin is directed to proceed from New Orleans, La., to Washington, D. C., and return for conference at the Bureau regarding rural sanitation work in the flood area.

Sr. Surgeon L. L. Lumsden is directed to proceed from Washington, D. C., to New Orleans, La., and such other places in Louisiana, Arkansas, Kansas, Missouri, and Tennessee, as may be necessary, and return, for duty in connection with the supervision of studies of and demonstrations in rural sanitation.

Surgeon W. C. Rucker is directed to proceed from New Orleans, La., to Galveston, Tex., and return, for conference with physicians in that city relative to public health matters.

CORRESPONDENCE.

To the Editor of the Journal.

Sir:

I wish to inform the subscribers of the *Medical Interpreter* that I have resigned as editor of this publication in December, 1928, and that I am no longer responsible in any manner for the actions of its promoters.

ALBERT ALLEMANN, M. D.,
Washington, D. C.

The Fellowship of Medicine and Post-Graduate
Medical Association.

London, W. I.
12th September, 1929.

Dear Sir:

We should be grateful if you would insert this letter in your Journal for the benefit of

medical men and women intending to visit England.

We have heard overseas postgraduates complain that London is so large, and so complicated, that it takes a few weeks to learn the way around; they also say that, unless they come armed with letters of introduction to physicians or surgeons, it is difficult to obtain the facilities they require. The Fellowship of Medicine was founded to overcome these difficulties, and overseas postgraduates should as a matter of course, come direct to the Fellowship where, without any charge, they can obtain information, advice and assistance.

We can—and every day do—save time for overseas post-graduates who apply to us either before leaving their own country or on arrival in England.

Perhaps the main point to be realized is that in England the Medical Year begins in October, and extends through the winter and spring until the end of July; August and September being the vacation months, opportunities for work are naturally somewhat curtailed, though the Fellowship endeavors to provide facilities for doctors who are only free for study during that time. We would add, however, that for overseas doctors their arrival in England, in August or September means that they will have ample time to settle down and become acquainted with London before starting work in earnest.

We have been told that the information chiefly desired by overseas practitioners is the dates of the various examinations for degrees and diplomas, and the dates, duration and opportunities for securing resident positions in London Hospitals, as well as the facilities for Special Courses of instruction. All this information the Fellowship of Medicine is in a position to provide.

As far as the fellowship itself is concerned, opportunities for clinical work all the year round are provided in the 40 London hospitals with which it is associated, as well as the Special Courses shown overleaf, and also weekly (free) lectures during the winter months, and weekly (free) clinical demonstrations (except during August and September). In addition, the Fellowship publishes monthly the "Post Graduate Medical Journal" (6/-per annum post free) containing post-graduate lectures, clinical demonstrations, reports of cases, and information on the various courses of instruction. Above all, however, the Fellowship endeavors to help in every way possible medical practitioners requiring advice and assistance. by acting as a central

bureau of information, and, of course, no charge is made for this service.

All enquiries should be addressed to the Secretary, Fellowship of Medicine, 1, Wimpole Street, London, W.1.

Yours faithfully,

H. W. CARSON,
Chairman of Executive Committee.

Editorial Note: The program of the special courses for 1930 that will be given in London is in the office of the New Orleans Medical and Surgical Journal. The length of this program precludes its publication. The program is accessible for consultation at any time. Any physician not living in New Orleans wishing information can be accommodated by writing to the Journal Office.

Dear Doctor:

You and the members of your association are most cordially invited to attend the next annual meeting of the Southern Medical Association which will be held in Miami, November 19-22. Our Association is making every effort to make this the outstanding meeting of the Southern Medical Association. The scientific program, with its twenty Sections, will insure a most diversified and interesting meeting. The clinics to be presented by the Dade County Medical Society will afford an excellent demonstration of the practical phases of medicine and surgery.

The sunshine and optimism of Florida will be injected into a well-arranged entertainment program. Golfing, boating, swimming, fishing and trap-shooting will be here for you. Miami and Miami Beach are amid the tropical setting of the show places of this great nation. At this season of the year, they are particularly beautiful as are other sections of Florida. The members of your Association will be afforded the opportunity of not only attending the best meeting the Southern Medical Association has ever held, but also of visiting our beautiful state to which thousands of tourists make an annual pilgrimage.

It is a privilege for the Florida Medical Association to entertain this great Association and we are desirous of having your members as our guests during the coming meeting of the Southern Medical Association.

Most cordially yours,

SHALER RICHARDSON, M. D.,
Secy-Treas., Editor (Fla.) Med. Assn.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

Dr. J. R. Markette, of Brookhaven, reports that the regular meeting of the Tri-County Medical Society was held at Tylertown, September 10. There was a good attendance and interesting papers were read by Dr. A. B. Harvey and Dr. B. L. Crawford. The subjects were "Traumatic Injuries to the Spleen" and "Treatment of Varicose Veins by Injection." The annual meeting of the Society will be held at Brookhaven in December.

Dr. and Mrs. Phillip Beekman, of Natchez, have returned home from a three months' vacation in Atlantic City.

Miss Anne Elizabeth Dicks, daughter of Dr. and Mrs. J. W. D. Dicks, of Natchez, was married to Mr. Lyman Darling, of Nashville, Tenn., on October 12.

The Homochitto Valley Medical Society met on October 10 in regular session.

We learned with much pleasure that Dr. Henry Boswell is "still alive," as shown by the following letter:

"I have your letter and regret that we do not have regular reports for the Journal from the Sanatorium, but I have been compelled to cut out the extension department which carried all publicity and it is largely for this reason that you fail to get anything. However, should anything unusual come up I shall try to get it to you. I am still alive, my wife and I just having returned from the Southern Tuberculosis Conference in Nashville, and am sending this to allay your suspicions to the contrary."

Dr. E. C. Parker and Dr. C. A. McWilliams, of the Staff of the King's Daughters' Hospital of Gulfport, and Grace Moss, Superintendent of the same institution, attended the Annual Hospital Standardization Conference of the American College of Surgeons in Chicago, October 14-18. The Staff of the King's Daughters' Hospital holds well attended meetings each month.

Drs. R. J. and S. E. Field, of Centreville, have announced that the name of the "Field Hospital and Clinic" has been changed to the "Field Memorial Hospital." A fifteen-room addition to this institution has recently been completed, increasing the capacity to thirty-two patients.

Dr. G. M. Martin resigned his position with the Martin Sanatorium of Picayune on the first of October. Dr. V. B. Martin is Superintendent.

The Natchez Charity Hospital is undergoing alterations and repairs, which when completed will add greatly to the efficiency of the institution.

It is being replastered and painted throughout with a very pleasing color scheme. An entirely new operating room and nurses' lecture hall is being built on the fourth floor. The operating room layout will be thoroughly modern, and will certainly be an improvement much needed and very much appreciated by the Staff. There will also be a new nursery with modern equipment. This will be a very attractive addition as well as an aid to the pediatric department. The improvement is expected to be completed by the first of the year.

Dr. R. H. Foster, Superintendent of the South Mississippi Charity Hospital at Laurel, reports that in the month of September there was born at the hospital a beautiful, well-developed baby white girl with only one hand. The left hand was missing from the wrist down. The roentgen-ray showed no bones below the lower end of the radius and ulna. The right hand was perfectly developed. There were no other defects.

Dr. Foster also reports the following:

"A professional sword swallower was a patient at this hospital recently for a minor ailment and before leaving the hospital was kind enough to swallow 30 inches of 'cold steel,' same being the blade of a small sword. While the sword was in his stomach a roentgen-ray picture was made of the man and the lower end of the sword was almost on a line with the crest of the ileum. There was no faking about it—I have the picture."

Dr. E. F. Howard, of Vicksburg, submits the following: "Judging from a couple of recent letters to the Journal our good friend Cooper seems a bit worried over certain 'crop failures' in Lauderdale County. Perhaps it would ease his mind to learn of the arrival in Vicksburg, September 19, of Leon Stanley Lippincott, Jr., who, judging from the broad grin that his father is wearing, goes a long way towards bringing up the average."

We are glad to have even the following brief statement from Dr. Orrin H. Swayze, of Yazoo City: "Hello! My Dear Doctor, I would be delighted to tell you news, but to tell the truth, there is no such thing at present in Yazoo City. I hope that the prospects are better for the future."

The class in "Communicable Diseases and Public Health," conducted by Dr. F. Michael Smith, director of the Warren County Health Department, held its first session at the Y. M. C. A. Building, Vicksburg, on September 26. This class made up of second and third year pupil nurses from the hospitals of the city, was a great suc-

cess last year. The hospitals co-operating are the Vicksburg Hospital, the Vicksburg Infirmary and the Vicksburg Sanitarium.

It is with much regret that we announce the death of Dr. David Walley, of Lumberton, on September 19, in Jackson. Dr. Walley was 44 years of age and a graduate of Barnes Medical College in 1907. He entered the Medical Corps of the Army in June, 1917, as a First Lieutenant. He served as an instructor at Camp Page, was promoted to the rank of Major, and sailed for over-seas with the 3rd Division. He saw active duty and was with the Army of Occupation, being cited for distinguished service in action and promoted to Lieutenant-Colonel. One year after discharge from the Army he entered the regular army Medical Corps as a Captain and served one year, resigning to accept the Superintendency of the Mississippi State Charity Hospital at Jackson, where he completed an unexpired term and served a full term of four years. He then went to Lumberton as surgeon for the Edward Hines Lumber Company and purchased the Lumberton Hospital which he was managing at the time of his death.

Dr. Walley was a member of the South Mississippi Medical Society, Mississippi State Medical Association, a fellow of the American Medical Association and of the American College of Surgeons. He had been a member of the State Board of Health.

Death was due to gall-bladder disease and followed an illness of only a few hours.

He is survived by his widow and six children who have the sincere sympathy of every member of the Association in Mississippi.

The high esteem in which Dr. David Walley was held by all who knew him, is well shown by the words of the Secretary of the Lumberton Rotary Club, of which Dr. Walley was formerly a member. He says: "Since the last meeting of the Club, Rotary has been saddened by the passing of an ex-member, 'Dave' Walley, who resigned his membership less than a month prior to his untimely death. The hospital has lost the man who built its fame; Lumberton has lost one of its most whole-hearted citizens; and the number of folks who have lost a loyal friend is innumerable. The thoughts of the club go out to the wife and family."

The semi-annual meeting of the Delta Medical Society was held in Greenville, October 9, afternoon and evening. The scientific program in the afternoon was as follows:

1. A Paper. Dr. R. C. Smith, Drew,
2. Stricture of the Urethra. Dr. W. G. Tabb, Greenwood.
3. Pellagra and the General Practitioner. Dr. Colquitt, Beulah.

4. A Paper. Dr. W. M. Merritt, Boyle.

5. Mediastinal Blastomycosis. Dr. O. H. Beck, Greenville.

6. Relation of the Physician to the Medical Society. Dr. H. A. Gamble, Greenville.

7. Hypertension. Dr. J. B. McElroy, Memphis.

In the evening a banquet was enjoyed at the American Legion Home, to which the ladies were invited. After a prayer by Dr. John Archer, of Greenville, the following program was carried out:

Vocal selection. Mrs. C. E. Spivey, of Hollandale.

Dance. Misses Clarene and Dorothy Anne Wineman.

"What the Old Gray Haired Physician Thinks of the Present Day Lounge Lizard." Dr. U. S. Wasson, of Moorhead.

Violin selections. Edward Ashley.

Address. Dr. L. F. Ferguson, of Greenwood.

Vocal selections. Lieutenant M. W. Gilland, Greenville.

Address to the ladies. Dr. E. R. Noble, Rose-dale.

Vocal selections. Jerre Massey.

Address. Dr. J. B. McElroy, Memphis.

Saxophone selections. Mickey Ashley, Greenville.

"The Frailties of the Doctor from the View-point of the Layman." County Court Judge Ray Toombs, Greenville.

"What Can We Do to Make the Delta Medical Society Better?" Dr. H. A. Gamble, Greenville.

Song specialty. Buddy Herrin, Rosedale.

Lucille's Orchestra furnished the music for the evening. Dr. T. B. Holoman, of Itta Bena, gave the benediction.

Officers of the Delta Medical Society were elected as follows:

President, T. B. Lewis, Greenville.

Vice-Presidents: From Bolivar County, Dr. H. F. Pace; from Sunflower County, Dr. J. W. Lucas, Moorhead; from Humphrey County, Dr. J. C. Higdon, Belzoni; from Leflore County, Dr. T. B. Holoman, Itta Bena; from Washington County, Dr. C. P. Thompson, Greenville.

Secretary, R. C. Finlay, Greenville.

Delegates and Alternates from the Delta Medical Society to the State Medical Association: Bolivar County, Drs. C. W. Patterson and W. A. Carpenter; Humphrey County, Drs. J. A. Barnes and J. A. Wadlington; from Sunflower County, Drs. R. M. Donald and B. F. McNeil; from Washington County, Drs. A. G. Payne and J. G. Archer; from Leflore County, Drs. W. E. Denman and George Baskerville.

We were delighted to receive a card from Dr. W. C. Brewer, of Columbus, written from Rochester, Minnesota. He says: "This is a great clinic. With eyes and ears open here one is sure to learn something."

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held at the Y. M. C. A., Vicksburg, October 8. The following papers were presented:

1. "Nephritis in Pregnancy." Dr. I. C. Knox.
Discussed by Drs. E. F. Howard, E. H. Jones, G. W. Gaines, H. H. Haralson, J. S. Austin, and S. W. Johnston.
2. "Abdominal Pain." Dr. G. M. Street.
Discussed by Drs. S. W. Johnston and J. S. Austin.
3. "Perinephritic Abscess," with Case Report.
Dr. P. S. Herring.

The Society received an invitation from the Armistice Committee of Allein Post, No. 3, of the American Legion to take part in the celebration of Armistice Day this year.

The Program Committee announced that the following members of the Society have been assigned places on the program for the November meeting: Drs. D. A. Pettit, Vicksburg; W. C. Pool, Cary; W. H. Scudder, Mayersville; Dr. F. Michael Smith, Vicksburg; Dr. H. W. Weimar, Vicksburg.

Dr. T. M. Dye, Secretary of the Mississippi State Medical Association, has sent the following letter to the County Secretaries of the State: "At the meeting of the Mississippi State Medical Association held in Gulfport, May 14-18, 1929, the House of Delegates, without a dissenting vote, increased the annual dues of the Association from three dollars to four dollars. This change will be effective January 1st, when the 1930 dues are payable.

The following proposed changes in the Constitution of the State Association were read and laid upon the table for one year. These will come up at the Vicksburg meeting, May 13-15, 1930, for final disposition:

'Article VI, Section 1. The Officers of the Association shall be a President, a President-elect, three Vice-Presidents, a Secretary, a Treasurer, an Historian, an Editor, and nine Councilors.

'Section 2 (Second sentence). The Secretary, Treasurer, Historian, Editor, and Councilors shall be elected for terms of five years, etc.

'Article VII. The House of Delegates shall be the legislative and business body of the Association, and shall consist of (1) Delegates selected by the component county societies, (2) the Councilors, (3) the Historian, (4) the Editor, (5) ex-Officio, the President, the President-elect, the three Vice-Presidents, the Secretary and the Treasurer of the Association, and (6) all ex-Presidents, provided they still be members of the Association."

At the regular monthly meeting of the Staff of the Vicksburg Sanitarium and Crawford Street Hospital the following Special Case Reports were presented:

(1) "Cholelithiasis, Stones in Gall-Bladder and Common Duct; Long Standing Jaundice. Operation." Dr. A. Street.

(2) "A Case for Diagnosis." Dr. J. A. K. Birchett, Jr.

(3) "Severe Secondary Anemia." Dr. L. J. Clark.

(4) "Fracture of the Skull Involving the Base." Dr. H. H. Johnston.

(5) "Polycystic Kidney, Bilateral." Dr. S. W. Johnston.

SOME HIGH LIGHTS IN MISSISSIPPI MEDICAL HISTORY.*

(Continued)

"Medical organization was by no means at a premium in these early days. The proceedings for the next three years are only recorded in a vague way, in the memory of a few of the older members. Meetings were held, but little was accomplished. The membership was small and only the faithful few who attended regularly seemed to be at all interested. This lack of interest was so evident that in 1874 not only did the programme fall rather flat, most of the essayists being conspicuous by their absence, but the finances were in such bad shape that a committee was appointed to ask an appropriation of three hundred dollars per annum from the legislature to defray the cost of publishing the Transactions. It seems rather a remarkable argument in favor of the statement, so often made, that "history repeats itself" that at this meeting was adopted a resolution demanding a five dollar fee for insurance examinations.

In 1877 the meeting was held at Grenada. As the first definite, authentic record of the efforts made by the Association in matters of public health, the report of the executive committee on this occasion is interesting: "After consultation * * * it was decided to apply to the Legislature for the passage of an act to establish a State Board of Health. Accordingly a bill * * * was presented at the last session of the Legislature, which after being completely emasculated and radically altered, was passed, a copy of which, as passed, is herewith presented. It is needless to say that in its present form, the law is worthless to the State. * * * The present law should be regarded merely as a permissive act * * * your committee believes it may be made available in ultimately accomplishing the objects sought. * * * It may be fairly presumed that the law will be amended and made effective whenever its capacities and benefits shall be demonstrated and fully appreciated.' The committee also urged the presentation to the Legislature of a registration act, providing laws for the collection of vital statistics, and advised against the introduction of any bill regulating the practice of medicine."

* (Facts gathered from a history of the Mississippi State Medical Association, published in 1910).

BOOK REVIEWS

Clinical Laboratory Methods: By Russell Landram Haden. 3rd ed. St. Louis, C. V. Mosby Company. 1929. pp. 317.

This new edition of a popular laboratory manual will be welcomed by clinical pathologists and laboratory workers in general. Reading through the book, one gets the impression that the author not only has selected good methods, but has tried them out thoroughly. The subject matter is handled in a way calculated to convey explicit directions as to technic and sufficient explanation of fundamental principles involved. Contrary to some works of this nature, the author has included only such materials and methods as are commonly needed in laboratory diagnosis, yet has abstained from making the book too brief or inadequate.

The section on bio-chemistry is very good, indeed; several features are of special value, namely, formulas and directions for running known or check solutions and tabulated charts for colorimetric readings, which give final results without calculations.

The book deserves to retain its place among several others held in high esteem by many clinical laboratory workers.

S. J. LEWIS, M. D.

The Toxemias of Pregnancy: By H. J. Stander. Baltimore, Williams & Wilkins Co. 1929. pp. 161

This monograph discusses in detail the various physiological and metabolic changes occurring during normal pregnancy. It contains a classification of the toxemias of pregnancy with a comprehensive discussion of pathological processes due to toxemia *per se* or due to nephritis, the various theories advanced on the changes of the blood chemistry, theories as to the cause, from mildest forms of toxemia to eclampsia, and detailed discussion of the pro and con of opinions as to the conservative or radical treatment of eclampsia. From the statistical tables in the monograph the weight of evidence is in favor of the conservative treatment.

ADOLPH JACOBS, M. D.

Monographs on General Agricultural and Industrial Microbiology. Volume I. Morphologic Variation and the Rate of Growth of Bacteria: By Arthur T. Henrici, M. D., University of Michigan. Charles C. Thomas. 1928. pp. 185.

This monograph discusses, both pro and con, the Cohn-Koch dogma of the constancy of cell forms and the immutability of bacterial species.

In Chapter I of the volume the author quotes extensively from scientific investigation on the subject dating from 1901 to the present day. The remaining chapters are devoted to the presentation and discussion of his own scientific investigation on the morphologic variation and the rate of growth of various bacteria. Although the volume is small, having only 185 pages, it represents a magnitude of work and scientific research, and while the volume is of more importance to the scientist engaged in bacteriologic research, the general scientist may obtain many interesting deductions from the work.

EDWIN H. LAWSON, M. D.

The Clinical Aspects of Venous Pressure. By J. A. E. Eyster, B. Sc., M. D. New York The Macmillan Company. 1929. pp. 135.

A significant rise in venous pressure is found in general, only in impending or existing cardiac decomposition. The rise is a direct consequence of the failure of the cardiac muscle. The heart is unable to cope with the blood entering from the veins. Thus the output diminishes, blood accumulates in the veins, and venous pressure rises. A significant change in arterial pressure may not occur because of arteriolar constriction.

In the normal heart the response to increased venous pressure and the consequent greater diastolic filling of the ventricles is stronger contractions and an output equal to the inflow. In the damaged heart, this response is inadequate to the demands. Dilation may occur and in itself cause further damage to the myocardium. At the same time, the sluggish capillary flow resulting from the diminished cardiac output leads to anoxemia in all capillaries, including those of the coronary system. Thus, the damaged heart muscle, under conditions which demand more oxygen, actually receives less. Fatigue is added to the effects of disease and the direct mechanical injury of overdistension. A vicious cycle is established.

Obviously treatment must accomplish one of two things. Either the heart must be relieved of the overload due to the high venous pressure, or it must be strengthened. Rest and venesection serve the first purpose; digitalis (in auricular fibrillation), the second.

The symptoms and signs of cardiac failure are largely an outcome of the high venous pressure. Of these the most important is edema. Concurrently with high venous pressure there is raised capillary pressure, and an excess of fluid is filtered to the tissue spaces. At the same time the anoxemia leads to the changes in the capillary walls, increasing their permeability. Thus, partly no doubt because of increased filtration, partly

because of the passage of plasma proteins, edema is increased.

The foregoing is a very inadequate survey of a part of the subject matter of this excellent monograph. The author discusses many other aspects of the subject: the relation of venous pressure to urinary secretion; its variations in a number of pathological conditions; and methods for its measurement, including a description of his own compact and simple apparatus, which is as easy to operate as a sphygmomanometer.

The author emphasizes the practical value of the measurement of venous pressure. Its value should be evident when one recognizes that "venous pressure is the most direct indication that can be obtained clinically of the extent to which the heart is moving its load of blood from the venous to the arterial side of the circulatory system."

RICHARD ASHMAN, PH. D., M. D.

Laboratory Diagnosis and Experimental Methods in Tuberculosis: By Henry Stuart Willis. Springfield, Ill., Charles C. Thomas. 1928. pp. 330.

A very excellent volume, devoted, as the name implies, to a consideration of laboratory and experimental methods in the diagnosis of tuberculosis. One gathers from reading this book that the author has endeavored to leave no stone unturned in his effort at completeness.

Under the heading of Laboratory Diagnosis we find not only a presentation of staining methods and technique, but a general consideration and interesting discussion of: Body Fluids and Excreta, Tubercle Bacillus, Non-Pathogenic Acid-Fast Bacteria, Methods of Concentrating the Tubercle Bacillus, Demonstrating the Tubercle Bacillus by Inoculation into Animals, Tuberculin, and its Preparation, Diagnostic Application of Tuberculin, etc.

The chapters devoted to Tuberculin and Serologic Diagnosis are interesting and instructive.

Under Experimental Methods are presented studies of tuberculosis experimentally produced. While the subject matter in these chapters is of more interest to investigators, yet there is much to be learned by the practitioner of medicine.

The reviewer feels that this volume is a very excellent one, that the contents are thorough and instructively presented and should be of interest to the practitioner.

J. HOLMES SMITH, JR., M. D.

The Treatment of Fractures: By Lorenz Böhler, M. D. Authorized English Translation, by M. E. Steinberg, M. S., M. D. Vienna, Wilhelm Maudrich. 1929. pp. 185.

This work is the resume of the experience of 19 years and the treatment of 10,000 cases, and is an analysis of the search for the causes responsible for many failures.

These he ascribes to anatomical misconception, lack of organization and improper technic. He emphasizes three cardinal points, "Love the life, save the limb and restore function." Emphasis is laid on the fact that a fracture is not simply a bone lesion but an injury to all contiguous soft parts. He insists upon absolute rest until perfect union, and warns against early exercise before complete fixation. He advocates more extensive use of plaster paris in non-padded casts quoting: "If we reduce exactly a broken joint and continuously hold it in good position until union takes place, and at the same time, allow the use of the fractured extremity, we obtain a movable joint, while on the other hand, if we apply massage and passive movements in the first days after the fracture, the joint becomes stiff."

Fractures in youth, results always good if completely immobilized.

Advocates local anaesthesia at site of fracture.

"The most disastrous innovation in the treatment of fractures is the operative reduction of the latter and the fixation of the fragments by the use of large metallic foreign bodies."

This book is well worth reading and should be in the library of any surgeon doing much fracture work.

H. E. BERNADAS, M. D.

The Treatment of Fractures and Dislocations in General Practice: By C. Max Page, D. S. O., M. S. (Lon.), F. R. C. S., and W. Rowley Bristow, M. B., B. S. (Lond.), F. R. C. S. New York, Oxford University Press. 1929. 3rd Ed. Pp. 283.

This is a practical book on treatment of fractures and dislocations, which should be in the library of every general practitioner of medicine.

Its clear type, well-phrased chapters and clarity of expression added to its practical and lucid descriptions, as well as its logical summary, make a book of ready reference, which every practitioner should have constantly at hand. Its simplicity and thoroughness qualify as a text book. Volkmann's contracture (ischæmic paralysis) is easily and cleverly handled in a short chapter.

Suggestions, as for instance, bi-valving a plaster cast while still soft, also one on early massage, passive motions, etc., negative advice on plate use, because of retardation of bony union, which make it not only a ready reference book, but an authoritative adjunct to the armamentarium of the busy doctor. The articles on dislocation, special fractures and injuries to the skull should be read over and remembered.

H. E. BERNADAS, M. D.

Physical Examination N Diagnostic Anatomy.

By Charles B. Slade, M. D. Philadelphia, W. B. Saunders Co. 1929. 4th Ed. Rev. pp. 196.

The book but for the exception of a few minor omissions, should be valuable to all students.

On page 130 no mention is made of the mid-diastolic murmur in mitral stenosis. On page 148 in discussing percussion of the abdomen no mention is made of shifting dullness in the diagnosis of free fluid.

However, on page 37 the advice to use the fingers in percussion instead of any instrument is well taken. The author in the chapter on "Physical Signs in the Diagnosis of Pulmonary Tuberculosis" brings out some good points; on page 169, he says: "In the vast majority of those cases, when all other means leave us in doubt, the roentgen-ray adds confusion to an already difficult situation." No one would like to be deprived of the help of the roentgen-ray, but this statement is true many times.

Again on page 179 the author states: "There has probably been more nonsense, more unreliable statement and writing expended concerning percussion, as an aid in the diagnosis of incipient tuberculosis than on any other diagnostic proceeding in the practice of medicine." This is absolutely true.

On page 183 the statement: "That one should never say that no rales are present until they have listened and been unable to hear any during and immediately after several acts of coughing." This is a well-known fact and usually carried out by men interested in chest work, but is a much neglected procedure among practitioners as a whole.

The diagrams are interesting, but it is doubtful if they would help the student much. However, we feel that the book fills well the place the author had in mind.

J. M. BAMBER, M. D.

Tuberculosis—Its Prevention and Home Treatments. By H. Hyslop Thompson, M. D., D. P. H. London, Oxford University Press. 1928. 3rd Ed. pp. 99.

The description of the predisposing causes and the mode of infection is written plainly and to the point.

The chapter on how to avoid susceptibility is sound, especially the advice as to great care being taken on returning to arduous occupation after an acute illness.

Chapter IV.—"Precautions against infection," should be read by all that either have or come in contact with those who have tuberculosis.

On page 50 the advice that temperature should be taken three times a day, would probably not meet the approval of all. The reviewer is of the opinion that a temperature record of every three hours during the day is better for a while at least and at all times one reading should be in the early afternoon, until the disease is arrested.

The book as a whole may be recommended for those for whom the book is intended, namely, the tuberculous and those interested in the disease, keeping in mind the advice, "Patient and doctor must be in close sympathy and have a common purpose in view."

J. M. BAMBER, M. D.

Diseases and Deformities of the Spine and Thorax:

By Arthur Steindler, M. D., F. A. C. S. St. Louis, C. V. Mosby Co. 1929. pp. 578.

This book fills a long felt want. To explain why this is so, I will quote from the author's preface:

"As much as we depend upon individual facts of pathologic and clinical nature as much as we do stand in need of reliable statistics. There is no reason why medical statistics could not be as reliable as are vital statistics. They must, however, be constructed with consideration of all pertinent factors. In this book only those statistics are used which, by weight of figures and reliability of observation, have a claim on force and conviction."

The chapter on congenital deformities of the spine and thorax is extremely good. For example,

the author's discussion of the relation of Spinae Bifida Occulta to Peripheral symptoms such as club foot.

Low back pain is discussed from all angles.

The chapter on Syphilis of the Spine is especially good.

At the end of each of the ten chapters all references are tabulated and a comment on each chapter is given. The illustrations are excellent.

This book cannot be too highly recommended both to the specialist and to the general practitioner.

EDWARD S. HATCH, M. D.

Otosclerosis, a Resume of the Literature to July 1928: Compiled under the direction of the Committee on Otosclerosis, American Otological Society. New York, Paul P. Hoeber. 1929. pp. 742.

This is a work of two volumes representing a complete resume of the literature on otosclerosis and is the first step in an ambitious and laudable effort of the American Otological Society to accomplish a solution of the problem of otosclerosis. Comment on or criticism of the subject matter has been purposely avoided by the committee.

Volume one deals with pathology and etiology, and volume two presents symptoms and diagnosis and treatment.

The two volumes represent an immense amount of hard work and will be of great value in facilitating the further study of otosclerosis.

H. KEARNEY, M. D.

Fundamentals of the Art of Surgery: By John H. Watson, M. B. B. S. (Lond.), F. R. C. S. (Eng.) New York, Paul B. Hoeber. 1927. pp. 349.

This volume written for "those surgeons beginning to practice the art of surgery in provincial towns" is very hard to appraise. It contains much useful technical information, much sound admonition philosophical observations.

In short the material of which it is made is all good and well founded.

This material includes surgical handicraft, solutions, apparatus, etc., case taking; surgical judgment; surgical technique; incisions; pre-operative and post-operative treatment, interfused with sage

philosophical observations. Altogether this is the most ambitious program for three hundred and forty pages that this reviewer has ever seen. It would seem that the author has directed his work to those practitioners who will do surgery with one text-book of surgery, one medical practice and a vague recollection of a college course possibly supplemented by ancient note books. Feeling, as I do, that the human race would be infinitely better off if such men were prohibited from using a knife I am unable to find a suitable use for a book that is otherwise excellent.

Briefly the subject matter is well but inadequately treated. The range of subjects is too great for the size of the volume. Still the book is charmingly written with evident earnestness and honesty and its content is accurate and sound.

J. D. RIVES, M. D.

PUBLICATIONS RECEIVED.

The MacMillan Company, New York: Hookworm Disease, by Asa C. Chandler, M. Sc., Ph. D. An introduction to the Study of Human Anatomy, by Robert James Terry, A. B., M. D. Edema and Its Treatment, by Herman Elwyn, M. D.

F. Blakiston's Son & Co. Inc., Philadelphia: *Materia Medica and Therapeutics*, including Pharmacy and Pharmacology, by Reynold Webb Wilcox, M. A., M. D., LL. D., D. C. L. *Memoranda of Toxicology*, by Max Trumper, B. S., A. M., Ph. D. *Recent Advances in Tropical Medicine*, by Sir Leonard Rogers, C. I. E., M. D., B. S. (Lond.), F. R. C. P., F. R. C. S., F. R. S.

Paul B. Hoeber, Inc., New York: *Tularemia*, by Walter M. Simpson, M. S., M. D., F. A. C. P.

J. B. Lippincott Company, Philadelphia and London: *Interns Handbook*, under the direction of M. S. Dooley, A. B., M. D.

Charles C. Thomas, Springfield, Ill. and Baltimore, Md.: *The Female Sex Hormone*, by Robert T. Frank, A. M., M. D., F. A. C. S.

Washburn & Thomas, Cambridge: *The Health of the Mind*, by J. R. Rees, M. A., M. D.

F. A. Davis Company, Philadelphia: *Clinical Medicine for Nurses*, by Paul H. Ringer, A. B., M. D. *Nutrition of Healthy and Sick Infants and Children*, by E. Noble, C. Pirquet and R. Wegner.

Lea & Febiger, Philadelphia: *Pathogenic Microorganisms*, by William Hallock Park, M. D., Anna Wessels Williams, M. D., and Charles Krumwiede, M. D.

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MEMORIAL ADDRESS FOR DECEASED MEMBERS.*

HENRY DASPIT, M. D.,
NEW ORLEANS.

At this the Semi-Centennial gathering of our society, it is my privilege to appear before you to recall in remembrance those Members of the Louisiana State Medical Society who have been taken from us during the past twelve months. I would that it were practical for me to bring to your attention all who have passed during the fifty years of the life of the society but such would entail the history of the advance of medical science and organized medicine in our State. To Dr. Rudolph Matas, alone, may we turn for these very important and interesting details and his History of the Louisiana State Medical Society should soon be available to you. I believe that I am correct in saying that today is inaugurated the precedent of annually setting aside a few moments in deference to those who have departed.

In anticipating this talk of today there arose before me a shadow group of those members of our profession whom I had learned to love and respect and who had died prematurely—no man whose life is largely dedicated to the relief of suffering and the betterment of his fellow-man ever reaches a definite allotment of days. The thought intruded itself as to just what we recall and most revere of these men who

have gone. As brothers in a learned profession, we are, or largely should be, unstimulated by any emotional feeling and thus we may be analytic as to what these memories mean and if we are wise so shape our lives that those who are to come have the inspiration to preserve the practice of medicine as a profession, a calling to better humanity and not allow sordid materialism, the mere acquiring of worldly goods, to be their sole objective.

We all strive for recognition and recognition means but one thing—Success. In our modern world, there appears to be but one form of success and such is financial. The following as written by Sir Humphrey Rolleston comes very close to describing the situation:

“There are many kinds of what may be called success—the fashionable and financial, the intra-professional, the scientific and intellectual, and the humanitarian. The obvious hall-marks of success in the popular view are, a large income and a title; in all walks of life these certainly point to achievement, and must not be gainsaid nor their value minimized; but they may be, and often are, due more to commercial astuteness than to those finer qualities of sympathetic imagination and unselfish wisdom which go to make up the character of the ideal healer. It must not, however, be assumed that the combination of the best success is incompatible with, or so often divorced from, the financial success as those without experience of either may believe.” “What shall it profit a man if he

*Delivered at the Louisiana State Medical Society Meeting, New Orleans, April 9-11, 1929.

gain the whole world and lose his own soul?"

Those of our members who have departed during the past year will be presented according to their ages. It is requested that those present rise while these names are read:

EDWARD DAVIES
WILLIAM D. WALL
J. B. GODFREY
CLARENCE EUGENE EDGERTON
WILLIAM SCHEPPEGRELL
WILLIAM EDWARD BARKER, SR.
ELIJAM MADISON ELLIS
LAWRENCE DALY
ABBE CYRAQUE DURIO
HENRY SULA COCRAM
ABRAM FELTUS BARROW
SAMUEL M. SCOTT
GEORGE BUCKER LESEUR
DOMINIQUE J. GRAGNON
ADOLPH O. HOEFELD
ALBERT SIDNEY JOHNSON HYDE
JAMES ERNEST POLLOCK
WILLIAM DAVIS NOBLE
MUNSELL LEE ADAIR

EDWARD DAVIES.

Mansfield, Louisiana, Philadelphia College of Medicine and Surgery, 1856. Member of the Louisiana State Medical Society. Confederate Veteran. Age 90 years. Died May 28, 1928, of carcinoma of the stomach.

WILLIAM D. WALL.

Born April 3, 1843, Wilkinson County, Mississippi. Died January 16, 1929, in Houston, Texas. Buried at Jackson, Louisiana. Educated at Whitestown, Mississippi, and Charlottesville, Virginia. Medical degree Richmond (Virginia) College of Medicine, Class of 1865. Civil War Veteran and the last surviving member of Company "K," 16th Mississippi Regiment, commonly known as The Wilkinson Rifles. He practiced medicine for sixty years in Wilkinson County, Mississippi, and in East and West Feliciana and St. Helena Parishes, Louisiana.

J. B. GODFREY.

Welsh, Louisiana. Louisville, Kentuckv. Medical College, 1890. Member of the Louisiana State Medical Society. Aged seventy-three years. Died December 17, 1928.

CLARENCE EUGENE EDGERTON

Born June 6, 1858, in Barnwell, South Carolina. Medical degree by Memphis College of Medicine. Graduate studies in the Tulane Graduate School of Medicine. Twice mayor of his city, member of local board of education. Died May 3, 1928, of cerebral apoplexy. Coushatta, Louisiana.

WILLIAM SCHEPPEGRELL.

New Orleans, Louisiana. Born in Hanover, Germany, 1860. His early life was spent in Charleston, South Carolina. He received the degree of Master of Arts in the College of Charleston. Doctor of Medicine in the Medical College of South Carolina in 1882. He also did extension work in electrical engineering. He was an outstanding and internationally recognized authority on hay fever and his many contributions to medical literature tell their own story. At the time of his death which occurred on August 9, 1928, following an operative procedure, he was President of the Audubon Park Commission and New Orleans Zoological Society. He was a member of his Parish Society, State Society, American Medical Association and many national organizations.

WILLIAM EDWARD BARKER, SR.

Plaquemine, Louisiana. Born August 25, 1860. Received B. A. degree from University of Mississippi in 1880. M. D. Tulane University School of Medicine, 1885. Former President of Iberville Parish Board of Health. Former Vice-President Louisiana State Medical Society. Coroner of Iberville Parish for 16 years. Member of American Medical Association and State and Parish Societies. Phi Delta Theta (Mississippi Chapter). Died at his home December 10, 1928.

ELIJAM MADISON ELLIS.

Crowley, Louisiana. Born at Poplar Creek, Montgomery County, Mississippi, December 14, 1886. Doctor of Medicine by Memphis Medical College, 1895. Practiced medicine for thirty years in Crowley, Louisiana. President of Louisiana State Medical Society, 1925-1926. Established Crowley Sanitarium, 1913. Died August, 11, 1928, of pneumonia.

LAWRENCE DALY.

Opelousas, Louisiana. Born February 15, 1863. He received his degree in medicine through the Louisville Medical College in 1888. His first two years in the practice of medicine were spent in Port Barre, Louisiana, when he moved to Opelousas where he practiced until the time of his death, March 15, 1929.

ABBE CYRAQUE DURIO.

Arnaudville, Louisiana. Born October 15, 1864. His early education was completed in St. Charles College at Grand Coteau, Louisiana. He later at-

tended the Manhattan College in New York City. He received his degree in medicine through the Tulane School of Medicine about 1888. He practiced in the neighborhood of his birthplace until the time of his death on Christmas Day, 1928. He was a member of his parish society, state society, and the American Medical Association.

HENRY SULA COCRAM.

Born on a plantation on the Red River, August 31, 1867. He received his early education in the local country schools. B. S. Louisiana State University. M. D. Tulane School of Medicine, 1891. Chief of Gynecological Staff, Charity Hospital. Emeritus Professor, Gynecology, Tulane Graduate School of Medicine. Member Orleans Parish, Louisiana State Medical Society, American Medical Association, American College of Surgeons. One of the originators of the New Orleans Sanitarium—now the Presbyterian Hospital. Interested in many financial and commercial organizations. Director of Canal Bank which noted at the time of his death, July 8, 1928: "He was gentle in manner and speech, modest and reserved, considerate of the opinion of others, endowed with a wonderful moral fortitude as well as physical courage. He led a truly exemplary life and was a gentleman of the highest type."

ABRAM FELTUS BARROW.

Born on Highland Plantation, West Feliciana Parish, Louisiana, September 13, 1868. He was educated at the Louisiana State University, Baton Rouge, Louisiana, and at Bethel Military and Classical Academy in Virginia. He graduated in Medicine from Tulane University in 1890. He was for many years the president of the Louisiana State Board of Medical Examiners. He was a member of the Louisiana State Senate, Constitutional Convention of Louisiana, State Tax Commission. Served in the World War as Captain and was stationed at Camp Logan, Texas. He held many offices in his Parish and State Medical Societies and for many years was a Fellow of the American Medical Association. He died in Saint Francisville, Louisiana, June 22, 1928. May each one of us mean as much to his community as did Abram Feltus Barrow.

SAMUEL M. SCOTT.

Born in Austin, Arkansas, March 23, 1873. His early education was spent in his county schools. Later, he entered Arkansas College at Batesville. He received his degree in Medicine from the Medical School of Washington University, Saint Louis, Missouri. Following graduation he served as interne in the Saint Louis Hospital. After a brief time of practice in Arkansas, he came to Louisiana, where he practiced medicine in several locations until he established his residence in Oakdale, where he died, October 27, 1928.

He was a member of his local, state and national medical organizations. He gave a great deal of himself to the advancement of his community in measures other than merely medical and at his passing it was said: "He lived not for himself but for others."

GEORGE BUCKNER LESEUR.

Born Magnolia, Mississippi, October 22, 1878. He graduated from the Louisiana State University in 1900 and received the degree of Doctor of Medicine from the Tulane School of Medicine in 1904. His internship was spent in the Charity Hospital at Shreveport. In 1909, he served as port doctor in Bridgetown, Barbadoes. During the World War, he received the rank of Captain and was stationed with 6th Division Field Hospital at Anniston, Alabama, and later transferred to Base Hospital at Camp Wadsworth, Spartanburg, South Carolina. He died in New Orleans, October 4, 1928.

DOMINIQUE J. GRAGNON.

Born Bay Saint Louis, Mississippi, March 7, 1880. His early education was completed in Saint Stanislaus College at Bay Saint Louis. He then entered the Medical Department of Tulane University from which school he was graduated in 1901. After a brief practice in New Orleans he married and moved to Breaux Bridge where he practiced until his death, November 15, 1928. He was an active worker in organized medicine and at the time of his death was Coroner of St. Martin Parish.

ADOLPH O. HOEFELD

New Orleans. Born 1880. His preliminary education was in the public schools of his city. He received his degree in Medicine from Tulane School of Medicine in 1901. Entering at once into the practice of his profession, he rapidly developed into one of the outstanding surgeons of his community. He was always active in the advance of better medicine. At the time of his death he was a member of the Journal Committee and one of the Board of the Health Department of the State. Died February 5, 1929.

ALBERT SIDNEY JOHNSON HYDE.

Born at Tangipahoa, Louisiana, December 29, 1884. Graduated from Louisiana State University in 1906. Member of Pi Kappa Alpha Fraternity. He graduated from the Tulane School of Medicine in 1909. Served as interne in the Charity Hospital at Shreveport until 1910. Practiced in Louisiana. Volunteer during World War and received the grade of First Lieutenant. Died at his home in Roseland, Louisiana, June 7, 1928.

JAMES ERNEST POLLOCK.

Born in Aberdeen, Mississippi, in 1887. He graduated from the Tulane School of Medicine in

1906. Both in his practice and in his medical teaching, he gave special attention to pediatrics. For some fifteen years he was associated with the Coroner's Office in New Orleans and was First Assistant Coroner. He died suddenly on February 18, 1929.

WILLIAM DAVIS NOBLE.

Newellton, Louisiana. Medical Department of Tulane University of Louisiana, New Orleans, 1912. Aged 38 years. Died on January 13, 1929, of pneumonia following influenza.

MUNSELL LEE ADAIR.

Shreveport, Louisiana. University of Texas, School of Medicine, Galveston, 1917. Served during the World War. Died November 17, 1928. Age 33 years. He died at the home of his parents in Marshall, Texas.

These men were true to the ideals of a profession which is distinguished by its singular beneficence. "It alone does its work of charity in a Jovian and God-like way, dispensing with a free hand truly Promethean gifts."

We may well turn to the words of Osler, who writes: "As a rule, man dies as he has lived, uninfluenced practically by the thought of a future life. Bunyan could not understand the quiet, easy death of Mr. Badman, and took it as an incontestable sign of his damnation. The ideal death of Cornelius, so beautifully described by Erasmus, is rarely seen. In our modern life the educated man dies usually as did Mr. Denner in Margaret Deland's story—wondering, but uncertain, generally unconscious and unconcerned. I have careful reports of about five hundred death-beds, studied practically with reference to the modes of death and the sensations of the dying. The latter alone concern us here. Ninety suffered bodily pain and distress of one sort or another, eleven showed mental apprehension, two positive terror, one expressed spiritual exaltation, one bitter remorse. The great majority gave no signs one way or the other; like their birth, their death was 'a sleep and a forgetting.' The Preacher was right: in this matter man hath no pre-eminence over the beast—as one dieth, so dieth the other."

It is my hope that I, and all of you, may live so that in the final moment we may feel as did the great William Hunter, who said: 'If I had strength enough to hold a pen, I would write how easy and pleasant a thing it is to die.'

SINUS DISEASE IN INFANTS
AND CHILDREN.*

R. C. LYNCH, M. D.,
NEW ORLEANS.

For refreshment of your memory, may I say, the antra and ethmoids are present at birth; their growth is dependent on tooth eruption, and as a rule are fully developed about the fifteenth year. The frontal is a part of the ethmoid and likewise is the sphenoid; they are simply indentations at two years of age and begin to manifest cavity formation at six and are complete about puberty.

All of this is dependent on normal physiology and freedom from pathology. An absent sinus, as for instance, frontal or sphenoid, in an adult is evidence of sinus pathology in childhood, likewise is the large cystic sinus ethmoid or sphenoid an evidence of pre-existing pathology.

Their physiology is not absolutely definite. That they are concerned with olfaction, respiration and phonation seems rational. They are self-draining and areated with each respiratory movement; both of these phenomena are markedly interfered with when pathology exists. Stasis can be easily demonstrated by medicating lipiodol with oil of cinnamon and injecting into these cavities; the long retention can be demonstrated in abnormal states by sense of smell, taste and roentgen-ray.

The histology and pathology are identical with adult sinuses, and identical changes are observed in young children, adolescence and adults.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

Symptoms of para nasal sinus in infants and children are nasal discharge and nasal blocking. Sneezing is frequent. Post nasal discharge is observed but not complained of, it is swallowed. Pain is conspicuous by its absence at least up to seven or eight years. Listlessness, peevishness, pallor, poor appetite, underweight plus the above, suggest a chronic sinus state. This is especially true where the tonsils and adenoids are out. Repeated colds with lateral pillar thickening and cervical gland enlargements are significant; repeated otitis media is likewise suggestive. Persistence of the one indicates chronicity of the other.

Diagnosis is no more difficult than in the adult, all methods of examination are practiced in both. The roentgen-ray is very valuable and the plate equally difficult to take. A poor plate is of no value; this is especially true of the soft, fuzzy plate. Absence of pus confuses many a diagnosis, pathology sufficient to manifest secondary phenomenon are the result of non-suppurating sinuses. Eye symptoms are usually not associated with suppurating sinuses but secondary to hyperplasia. This does not include orbital cellulitis of conjunctival lesions. Diagnostic puncture, particularly of antra for bacterial culture and cellular study, is particularly significant and dependantary.

Paranasal sinus disease in infants and children can be the focus of a large group of secondary manifestations. Please remember that systemic infection and intoxication from a primary focus is usually hematogenous; this is true when the tissue affected is nerve, serous membrane, periosteum or the functional part of an internal organ. The other group is made up of those lesions which are manifest because of contiguity of tissue, direct lymph or vascular drainage, or more remote surface infections. At the head of this latter group, otitis media, either catarrhal or suppurative, top the list. In a series of 1000 cases 68 per cent showed an associate sinus manifestation. I need only mention the

tracheo-bronchial-pulmonary pathway and the gastro-intestinal tract, likewise the orbit exclusive of nerve and sometimes this too, also in the conjunctiva, meninges are of this group. Kidney, heart, joints, pleura and ulcerative lesions of the gastro-intestinal tract belong to the hematogenous group.

Principles of treatment are likewise the same as in the adult though infinitely more difficult of execution. Ventilation and drainage are essential, regulation and appropriate diet are particularly necessary. Climate, sunlight, artificial light and autogenous vaccines have their value. Radical surgery is reserved for the isolated, well-studied and diligently-treated case. Thus far they are few. I have opened and curetted the sphenoid at two years, finding a large cavity in one case nearly adult in size. I have opened and operated radically the frontal at two and one-half years, at five, at seven and ten years. I have operated the antrum radically at five years and up to adult period.

The indication, to repeat again, is only after the most painstaking study and treatment of less radical measures, the only exception being the very acute fulminating lesions.

DISCUSSION.

Dr. J. T. Crebbin: It has been wisely pointed out that the syndrome in children differs but little from those in adults. Children may not complain of pain, whereas adults usually do. Children may suffer from repeated colds, otitis media and similar complications. Hypertrophied faucial and pharyngeal tonsils may be present. After their removal many of these little patients recover from the sinus infection. If they do not, further investigation is necessary. The roentgen-ray is a most important help in these cases.

Dr. Dean was one of the first to call attention to these conditions in children and his research along these lines has been of great help.

My experience shows that the maxillary sinus is more frequently involved than the others, but we must remember that any and all of the sinuses may be infected. I have treated and operated on a number of young children, and the results are just as promising as on adults.

Ventilation and drainage are essential in treating these cases, plus building up of the resistance by the proper diet and sunshine.

Dr. Homer Dupuy: Sinusitis in children is more frequent than some of us even now recognize. In young subjects it is subtle and insidious in its course. There is a continued so-called head cold, with a temperature ranging around 100°. There is much coughing, due to the trickling of mucopus post-nasally. There is but slight if any nasal discharge anteriorly, and this may mislead us. The condition seems easy enough to diagnose, but I wish to emphasize that such a sinus affection can and does result in a general septicemia, with all its life-endangering complications. Only early diagnosis of the disease and surgical drainage of the infected sinuses can avoid fatalities. Patients are frequently referred too late, when septicemia is already present and no local measures can avail. Yet the tragic end could have been avoided by prompt and proper treatment. Sinusitis in the young especially is not solely a question of local treatment. Use neo-silvol, suction, adrenalin and other measures by all means, but the pendulum is now beginning to swing back the other way. In the background of the sinusitic subject we are looking for some deficiency in the mucus membrane fat supply, a lack of vitamin A. Cod liver oil and its derivatives are now given for this condition with apparently encouraging results. We are trying to correct the tissue make-up of these patients with recurring sinusitis, who do not recover after T. and A. surgery, and we find that a combination of general and local measures is best.

Dr. M. P. Boebinger: The question of sinusitis in the very young is as interesting to the general practitioner as to the specialist. The textbooks, as Dr. Lynch has pointed out, show that the ethmoids and maxillary sinuses are present at birth, but that the frontal and sphenoid are spoken of merely as recessions or depressions; the sphenoids at the end of the first year are about the size of an ordinary pea. From 4 years to puberty the business become well developed. It is easy to operate on the maxillary sinus, but it is extremely difficult to operate on others less well developed. On the service of Dr. Dupuy at Charity Hospital anesthesia has been one of our problems in this connection. General anesthesia causes too much bleeding, yet how, if you use local anesthesia, can you use it in the case of a small child? For this reason I have resorted to the use of the suction apparatus and I believe many specialists are following my example. I sometimes have 10 or 12 children at

the office in one afternoon, and after the second or third visit I have very little trouble using the machine. I use a pressure of 10-30 pounds, or, rather, 10-30 inches, and thoroughly empty the sinuses, doing it with ease, because, as I have already pointed out, they are undeveloped and small in young children. I prefer this method to radical surgery, when possible, which must be done under general anesthesia, in the very young. The post-operative treatment or washing out of sinuses is almost impossible in one's private office. In clinic work the child can be given a short anesthetic, but even this is not practical and in many cases most unsatisfactory.

Dr. R. C. Lynch (closing): The syndrome found in young children has been discussed thoroughly, and there has also been brought out the fact of what might be termed the lack of permanent convalescence after tonsillectomy. Given a case of suspected sinusitis, we have found, with these conditions present and the aid of the roentgen-ray study, that in many instances our suspicions were justified. I am sorry that some one did not discuss diagnostic puncture of the antrum or sphenoid and study of the fluid returned. Our method is to insert a straight cannula, and by means of a small, straight needle inserted through it to inject 10 to 20 minims of normal saline solution; this is sucked out and submitted to the P. D. for examination, not only for bacteria but also for a cellular count. In recent exacerbations of sinus disease there will be a great number of polymorphonuclear cells, and in the low grade chronic type associated with secondary manifestations of some focus of infection the round cells will predominate. We have been searching for the last four years for cases associated with the kidney complications described by Marriott, which he terms nephrosis. So far I have found only one case. In it the albumin ran as high as 10 to 20 per cent, with a fairly good P.S.T. test. There were very few cast and little blood. In this case drainage of the sinuses and antra, with treatment for two or three weeks, reduced the albumin to 3 per cent, until a second infection brought it up again; a second drainage, however, again reduced it. I mentioned the operative procedures partly to show that, although the frontal and sphenoid are supposed to be undeveloped at birth, we had run into cases, isolated it is true, in which they were large, a possibility which should be kept in mind. I am not an advocate of suction in these conditions, though this is my individual opinion only. I am convinced that these children are benefited more by the proper diet than by any other single measure, and here the co-operation of the pediatrician is absolutely essential.

INFANTILE PARALYSIS*

(WITH MOTION PICTURE DEMONSTRATIONS).

H. THEODORE SIMON, M. D.,

NEW ORLEANS.

Since the motion picture reel to be shown consumes a good part of the allotted time, I beg your indulgence when I superficially touch on a subject about which volumes have been written.

Infantile paralysis, anterior poliomyelitis, or call it by any other of its many synonyms, is the one scourge responsible for the greatest number of crippled and maimed in our orthopedic clinics. Unfortunately it seems to be steadily increasing in our fair Southland. Epidemics in the neighboring states have been reported only this past summer, and sporadic cases in our own midst are increasing.

Infantile paralysis is an acute infectious disease caused by a filterable micro-organism which produces a general systemic infection and later a paralysis, usually of the flaccid type, of any or all of the skeletal muscles. Dr. E. C. Rosenow of the Mayo Clinic feels that a streptococcus which he has isolated is the causative agent. He however, has been unable to prove by the Koch Law a true etiology and consequently his streptococcus theory is not generally accepted. The organism, whatever it is, has a predilection for nervous tissue, particularly nerve tissue of the spinal cord and especially of the anterior horn or the motor cell area of the cord, here acting as an irritant it causes a low grade inflammation which is associated with edema, hemorrhage, round cell infiltration, occlusion of blood vessels with a consequent impairment of the blood supply and finally actual motor cell death from the mechanical agents above mentioned plus the possible chemical poison liberated by the micro-organism.

No age seems immune from this disease, however, 75 per cent of the cases occur in children under six years of age. The mortality rate varies from three to seven per cent in sporadic cases to an astounding twenty-eight per cent in some epidemics. It is a summer disease prevailing in June, July, August, and September.

Infection is spread by the patient in the acute stage or by healthy humans who are apparent carriers of the organism. The period of incubation is from four to fourteen days, and the naso-pharynx is the seat of primary infection.

Symptoms of the onset vary in the one extreme from the chill with slight headache or intestinal disturbance and its associated paralysis, to the other extreme of most acute chill, temperature, rapid pulse, and so forth. Between these two are found any gradation of symptoms.

Diagnosis is not very easy and is often never made or suspected until actual paralysis is found. The onset with its variance of symptoms is of little help. However, when one sees a case which looks too ill for the temperature chart, where the pulse is too rapid, where a spine rigidity seem present, reflexes at first exaggerated but later diminished, muscles tender and painful to the touch, one strongly suspects infantile paralysis. In these cases the spinal fluid is under pressure, globulin is present, and the cell count is increased. Dr. Rosenow states that the precipitin test made with his streptococcus is of utmost value in diagnosis.

All authors divide the disease into four stages as follows:

1. Acute onset, lasting up to one or two weeks.
2. Stationary stage up to one month.
3. Partial recovery—up to one or two years.
4. Chronic stage—after which no improvement is possible.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

All convalescing cases show some improvement in the paralysis due to the before mentioned products of inflammation being absorbed. Most cases have some permanent paralysis because of the motor cell death and scar tissue formation.

Treatment in the acute stage is symptomatic. Urotropin was long thought a specific because experimentally with monkeys it is helpful. Serum is probably the best known therapeutic agent and possibly convalescent serum is the best. Next in value is Flexner serum, then Pasteur serum, and finally Rosenow serum.

In the stationary stage with the described muscle tenderness which lasts several weeks, the best form of treatment is to keep the effected limbs warm, the joints in a neutral position and not to use any massage or the like, this is best accomplished by putting the limb or limbs in plaster of paris casts. Thereapeutically strychnine in the form of tincture nux vomica in large doses should be given.

The stage of partial recovery, after the fourth or sixth week, sees us cutting off casts, using splints or braces to maintain neutral joint position, and here electrotherapy, hydrotherapy, and physiotherapy are of utmost value.

Remember that the trouble now is with the motor impulse; your motor or muscle is still good and is ready to function when the current is again turned on. So all of the therapys mentioned endeavor to keep the muscle or motor as normal as possible, waiting for nature to throw on the switch.

And so we come to our chronic stage with its permanent paralysis. If deformity has been prevented, braces may not be necessary. If support is necessary we should try to get away from braces and use our

operations on muscles, tendons, bones and joints to establish stable limbs. This is better described in the film which we will now show.

DISCUSSION.

Dr. P. A. McIlhenny (New Orleans): Dr. Simon has succeeded in making the case very clear, both in his paper and in the pictures which he has exhibited to demonstrate the results of his work. The point I wish to stress is the prevention of deformity. We specialists in bone and joint surgery see very few cases of poliomyelitis in the early stages, when the diagnosis can still be made. It therefore rests with the pediatrician and with the general practitioner to diagnose the case before paralysis occurs, and in many instances that is impossible. As soon as a definite diagnosis is made, we should endeavor to prevent deformity and so obviate the necessity of correcting it later on. Unless we do this, we have the possibility, not only of actual paralysis of the muscles, but also of an atrophic paralysis due to contractions developing in the early stages of the disease. If this occurs, the contractures must first be overcome and then by muscle education and physiotherapy we must develop the muscles which have been atrophically paralyzed before we undertake any surgical procedure to restore the muscle balance. If these procedures are undertaken at the same time as elongation of the contracted tendons, we may get an over-balance in the opposite direction. Caution should, therefore, be exercised that our operative procedures are performed in different stages.

Dr. E. D. Fenner (New Orleans): I want to emphasize the fact that poliomyelitis in its terminal effects is not a curable condition. All that we can hope for is improvement, but there is scarcely any case which cannot be improved, particularly in the power of locomotion. The ultimate aim of all surgical procedures is to get the patient out of his braces and enable him to walk without them. We cannot always achieve that result, but that should always be our aim. I agree with Dr. Simon as to the wisdom of stabilizing operations on the lower extremities, where the effects of this terrible disease are most often exhibited, and I find that astragalectomy is more satisfactory than any other type of operation devised for this purpose.

DIAGNOSIS OF GASTRIC AND DUODENAL DISEASES: FACTORS LEADING TO ROENTGENOLOGIC ERROR.*

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ROCHESTER, MINN.

Notwithstanding the increased efficiency in the roentgenologic diagnosis of gastric and duodenal diseases, its difficulties have by no means been eliminated, and diagnosticians are still no less concerned with errors than in the past. A majority of the lesions are relatively gross, readily discerned and not hard to distinguish from one another. The demonstration of a mere majority, however, is not satisfactory either to clinician or roentgenologist, and in the constant effort to salvage additional cases from the minority, observation becomes more critical and sources of error multiply rather than diminish.

Mistakes in diagnosis are of three kinds: (1) the diagnosis of a lesion is made when disease is not present, a wrong affirmative diagnosis, (2) disease is present but is not discovered, a wrong negative diagnosis, and (3) a lesion is found but not properly identified, a wrong differential diagnosis.

On reviewing a series of errors comprising all varieties, a strong tendency to erroneous affirmative diagnosis becomes apparent. This is accounted for largely by the fact that deformity of the visceral lumen, which is the most important basis of diagnosis, may result not only from disease but numerous nonpathologic causes.

Among the simulants of pathologic deformity, those produced by tension of the abdominal muscles should be placed in the first rank. Whether made apprehensive by the gloom of the roentgenoscopic chamber or fearful that the examination may reveal grave disease, the patient tenses his mus-

cles as a reaction of defense, and the stomach is distorted in proportion to the increase of abdominal pressure. In extreme instances the stomach is forced up under the left side of the diaphragm, apparently diminished in size, and deformed in contour, or a stomach of the usual vertical hook-like form is converted into a transversely lying viscus of an irregular steer-horn shape. With pressure of less degree, the antrum may be narrowed and retracted toward the median line, or an indentation resembling an incisura may be produced on the greater curvature. Many of the deformities take on the aspect of filling defects caused by gastric carcinoma or other new growths, and as a contracted rectus muscle often feels much like a palpable tumor in the abdomen the illusion may be quite deceptive.

A tense abdominal wall also prevents satisfactory filling of the duodenal bulb, since it interferes with manipulating the stomach to force barium in quantity through the pylorus. The rigidity of the abdomen also interferes with manipulation of the bulb and with approximation of its walls to search for the shadows of flecks of barium. So strongly is the duodenum forced upward that its upper border may be indented by the liver, or its lower border may be sharply angulated at the juncture of the bulb with the second portion of the duodenum; either deformity may be attributed to ulcer. Further, the scant filling of the bulb is likely to give the impression of pathologic deformity. "Puddling," separation of the duodenal content into detached masses which tend to flow back through the pylorus into the stomach, is sometimes an effect of the heightened abdominal pressure.

An abnormally tensed abdomen is readily recognized by its extreme rigidity and retraction, both of which are obvious on palpation. If the patient is reassured as to the harmlessness of the examination and is required to drop his shoulders, bend his head forward and breathe quietly with his

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mouth open, the muscles usually will relax. If these measures fail, the patient should be made to sit or to recline until the agitation disappears.

Although examiners are familiar with it, spasm of the muscles in the wall of the alimentary canal is still occasionally responsible for a wrong diagnosis. Traveling and transitory spastic deformities which fade out under the observer's eye are not deceptive. However, continuing spasm of the pyloric end of the stomach, where it has its favorite seat, is at times perplexing. Here it is likely to take the form of a gross defect which may be confounded with one produced by carcinoma or with the spastic accompaniment of an ulcer.

To eliminate purely reflex, functional spasm, an anti-spasmodic, such as belladonna, is commonly administered. Although spasm of this sort usually will disappear after such drugs are given, I am inclined to doubt the constancy of their effect or the necessity of giving them as a routine. To me it seems probable that spasm without local organic cause is often merely a manifestation of general nervous excitation, and, further, that frequently what is supposed to be spastic distortion is really deformity from abdominal tension; in either event the disfigurement will vanish when the patient's serenity is regained, with or without drugs. I am also skeptical of the theory that the duodenum is often subject to reflex spasm from disease elsewhere, and prefer to believe that duodenal deformity not the result of ulcer is almost invariably due to causes other than reflected spasm. Failure to fill the bulb completely, marked abdominal pressure and, although rarely, adhesions are among these causes.

Tumors outside but adjacent to the stomach usually produce a smooth, sweeping incurvation of the gastric margin, most often along the greater curvature. Pancreatic cysts occasionally make a central, rounded defect resembling that of a benign gastric

new growth. As a rule, the extrinsic situation of a tumor becomes apparent on manipulation, and, as the gastric rugae are preserved, disease of the stomach can be excluded.

Tumors in the right upper quadrant may enlarge the duodenal circle and compress the lumen of the entire duodenum, but the narrowing tends to be uniform and unlike the irregular stenosis of ulcer. An enlarged or tense gallbladder may press on the duodenal bulb, forming a smooth concavity on the border of the bulbar shadow, but the deformity should scarcely be mistaken for that caused by ulcer.

Deformity of the greater curvature of the stomach by gas in the bowel is common and characteristic, but it still occasionally deceives the unwary, and this is also true of deformity from pressure against the spine. Masses of food in the stomach make defects in the gastric shadow which are readily moved about by manipulation. Despite the publicity they have received, adhesions from extraneous disease rarely cause deformity of the stomach or duodenum, and then usually give rise to multiple sharp, often small, serrations which are rather distinctive.

Although the projecting fold between two peristaltic indentations on the lesser curvature of the stomach should never be mistaken for the niche of a gastric ulcer, this error is frequently made. During roentgenoscopic examination the bulge can be seen to move on toward the pylorus and its nature is evident. The mistake occurs by attempting to make a diagnosis on one or two films without roentgenoscopy. In this way also a small bolus of barium, in the bowel but adjacent to the curvature, may be misinterpreted as a niche. Occasionally a normal stomach has a short incisure on the lesser curvature near the pylorus, and the prominence between the incisure and the pyloric ring is not unlike the niche of an ulcer. The fold is probably due to slight relaxation and redundancy of the curvature. It is noteworthy, also, that

When the stomach is forced upward by palpation during roentgenoscopy the lesser curvature above the incisura angularis may exhibit a localized bulge resembling a niche, but it disappears when manipulation is stopped.

Many gastric and duodenal ulcers can be revealed only as dense flecks in the shadow of the barium. To discover them it is necessary to approximate the walls of the stomach and duodenum in order to thin out the barium content, and, as the flecks are often small, close scrutiny is required. In the process of manipulation, barium is sometimes pent up in a sulcus between normal or hypertrophic gastric rugae. With continued palpation the fleck-like shadow tends to disappear or to change in situation, and the rugae pursue their normal parallel course, whereas a true ulcer-fleck persists at the same site and the rugae usually converge toward it. Further, a pseudofleck is likely to be elongated in line with the rugae and is not accompanied by spasm. It is possible also to confine barium in the pyloric canal and mistake it for an ulcer-fleck in the ring or in the base of the duodenal bulb.

Reliance for diagnosis on secondary, or indirect, manifestations of gastric or duodenal disease, without any direct evidence, will lead inevitably to error. Chief among such manifestations are six-hour residues in the stomach, alterations of peristalsis, localized tender points, and variations of gastric tonus. It should be an inflexible rule never to make a positive diagnosis of a lesion in the absence of a constant filling defect, deformity or niche. Secondary phenomena are of value in two ways only: (1) they stimulate search for an underlying cause, and (2) they have a certain confirmatory weight when direct signs are so faint as to be doubtful.

Errors on the negative side, the failures to discover existing disease, are sometimes due to lack of thoroughness in examination or to inadequate technic. Especial care is necessary in examining the cardiac end of the stomach. This region should be studied

attentively as the barium enters, for the chief indication of a new growth in the upper pole may be deflection or division of the stream of barium. After ingestion is completed, the barium should be pressed up into the cardia to exhibit its contours, and in doubtful cases examination in the recumbent or in the Trendelenburg position is advisable. The necessity of thorough exploration for ulcer-flecks in the stomach and duodenum has already been mentioned; most of the negative diagnoses in cases of ulcer probably result from overlooking demonstrable flecks. In a few instances of duodenal ulcer I have mistaken a circular constriction of the bulb, which was otherwise normal, for the pyloric ring and have missed the diagnosis; the blunder is not one to be proud of, for the examiner should be sure of his landmarks.

Certain negative errors, however, are excusable. Craters of gastric ulcers completely filled with detritus, extremely shallow ulcers, small ulcers in the cardia, early scirrhus carcinoma and beginning syphilitic infiltration are likely to escape the most vigilant observation. Nonobstructive ulcers low in the duodenum or on its lower border near the bulbar apex are seldom demonstrable with certainty. Perforated ulcers and craterless calloused ulcers of the duodenum occasionally do not produce visible deformity. For instance, adhesions following perforation may hold the duodenum in close approximation to the smooth under-surface of the liver and thus prevent any appreciable deformity of the bulb. However, notwithstanding their variety, the aggregate of all such errors should be relatively small.

Errors in differential diagnosis are likewise varied in character but the percentage should not be high. Those most likely to occur are failures to distinguish gastric carcinoma from prepyloric ulcer, diaphragmatic hernia, benign new growth, or gastric syphilis. Since all of these lesions have rather definite and dissimilar characteristics, distinction is hard to make only in an

atypical case. When an ulcer is seated near the pylorus its niche may not be apparent, the entire prepyloric segment is distorted, thickening of the antral wall may be faintly palpable, and the whole picture is identical with that of early carcinoma. In such circumstances the diagnosis of "lesion at the outlet," without attempt to specify its nature, is warranted. Hernia of the upper pole of the stomach through the diaphragm produces deformity which may be confounded with that caused by carcinoma of the cardia unless the examiner is alert for this rare simulant. Lobulated benign tumor and papillary carcinoma have a like appearance, but as benign new growths often become malignant the distinction is not of the highest importance. On the other hand, it is not a trivial error to confound syphilis with scirrhus carcinoma. Both diseases tend to affect the antrum primarily and often closely resemble each other on the screen and the film, although a syphilitic infiltration is almost never palpable, and a carcinomatous mass can usually be felt. If the patient is young and cachexia is lacking, syphilis should always be considered in the differential diagnosis.

In recounting these sources of error I have had no intent to leave the impression that the roentgenologic diagnosis of gastric or duodenal disease is untrustworthy, or to furnish alibis for the examiner. Surely apology is not needed for the achievements of the roentgen ray in this field. Any roentgenologist worthy of the name is his own most stringent critic, and he does not seek to excuse blunders which are unpardonable. Rather have I hoped, by emphasizing anew the more common mistakes and their causes, to promote the mutual confidence and co-operation of clinician and roentgenologist in order that more and better diagnoses may be made.

DISCUSSION.

Dr. Urban Maes (New Orleans): When a general surgeon rises to discuss the paper of a roentgenologist controversy usually follows, but I cannot find fault with much that Dr. Moore has said, though I believe his wealth of experience will be

of more value to his fellow-roentgenologists than to the surgeon. The general surgeon, as a rule, tries to find fault with the roentgen-ray because he receives incorrect diagnoses from it, chiefly in connection with peptic ulcers. Dr. Moore has given us some very valuable suggestions as to why this particular condition is productive of so much error. I think we have learned to depend a little too much on the roentgenologists for our diagnoses, not that he does not give us reliable ones, but because he has a tendency to make us very lazy. We depend on him to make our diagnoses when we ought to be making our own, whereas he wants nothing more than to give us laboratory aid to supplement our clinical findings. He cannot be blamed for a certain amount of error when we realize that he is not taking a true photograph but is interpreting shadows caused by an opaque substance. We ought to go more carefully into the history and physical findings of our patients and make at least a tentative diagnosis for ourselves before we ask the radiologist to help us out and to confirm it. If this were the general rule, there would be no controversy between the two branches. I admit that I am getting into the class of lazy surgeons. I am too much inclined to depend upon the roentgenologists for my diagnoses. If we follow the rules they have set down, we shall be using the assistance of the roentgenologist as it should be used, and the percentage of wrong diagnoses will decrease.

Dr. L. J. Menville (New Orleans): Dr. Moore's paper was educational in many respects, as it could not fail to be, considering the abundance of material at the Mayo Clinic, where an average of 50 gastro-intestinal examinations are made in a single day. The radiologist is a consultant in medicine, nothing more and nothing less. He uses his sense of sight in radiological examinations, and there is no reason why he should not be as efficient in interpreting signs and rendering diagnosis by it, as the internist is in determining heart and lung lesions by his sense of hearing. I wish to impress upon you at this time, a statement that I have often made. A negative roentgen-ray examination of the stomach and duodenum only means negative for any organic pathology and does not negative functional diseases, to which so many symptoms are due. The roentgenologist desires the same co-operation that is extended other specialists of medicine, that the patient may be given the benefit of modern laboratory facilities.

Dr. Barrow (Shreveport): It has puzzled me for a number of years why I had to make so many negative reports in gastro-intestinal examinations when the doctors who sent me the patients knew definitely, as did I, that something was the matter.

Functional disturbances are frequently caused by some organic change which we cannot demonstrate, but we are justified in saying they exist because of the functional disturbance which we can see by the roentgen-ray. I wish to call attention to one condition which we frequently meet and which is only demonstrated by the functional disturbance, namely: shortening or contraction of the ligament of Treitz and adhesions about the foramen of Winslow. These conditions produce a sub-total obstruction in the first portion of the jejunum and are indicated by a dilatation and reverse peristalsis in the duodenum, with tenderness over the duodeno-jejunal junction. We have had any number of these cases and with the above described phenomena; operation disclosed a mechanical hold-back in the duodenum, the result of adhesions in this area.

I agree with most of what Dr. Maes says, but I wish he had not used the word "confirm," as I understand patients are not sent to the radiologist to confirm clinical findings, but rather to see if they can be confirmed or negated, or what other conditions may exist to explain these clinical symptoms. The sooner we come to understand that the radiologist is a consultant and should not be used to bolster up supposed clinical findings, the better off will be all concerned. The roentgen-ray examination should be made independently of the clinical data and it is only by this method that true roentgen-ray findings can be reported. So long as we know what the clinical diagnosis has been, just so long will we be biased in our findings and our reports will be hybrids rather than true roentgen-ray data.

Dr. Preston M. Hickey (Ann Arbor): I should like to discuss this paper from another angle, the validity of gastric reports. The first qualification which the radiologist must possess is honesty. Unless he is radically honest in his make-up, he cannot be a good physician in this special field. Second, he should have a thoroughly judicial type of mind, open to conviction and without bias, that is, he should not be influenced, as the last speaker has said, by extraneous evidence. Then, to go further, the validity of a gastric report depends on the experience of the man making it. I know one doctor who bought a roentgen-ray machine, this was some years ago, and the first week he had it, he made eight gastro-intestinal studies

with eight different diagnoses; all eight patients were operated on and all eight diagnoses were wrong. This sort of thing is still happening. Doctors buy roentgen-ray machines to study fractures in their own practice. Then, because the machine is there, they begin to make gastro-intestinal examinations, a field which they have no right to enter because it is very technical and long experience is necessary. Doctors without proper training cannot diagnose lesions of the gastro-intestinal tract. It takes all my diplomacy to answer letters which I get very often, enclosing two gastric roentgen-ray films, an immediate and a six-hour one, and asking me to make a diagnosis of the condition. I have a hard time saying tactfully that without the fluoroscopic finding, I have not enough data to venture an opinion.

Dr. A. B. Moore (closing): It is a privilege to have a paper of mine discussed by a clinical surgeon of Dr. Maes' experience. I appreciate his having discussed it at all, and I particularly appreciate his emphasis on the fact that the roentgen-ray is only one link in a long chain of evidence. No diagnosis, as he indicates, should be based on any one test. Especially do I believe that of all the fallacies in diagnosis at the present time the one in the front rank is the history of the case. Peptic ulcer is a chronic disease and the patient's history soon becomes unreliable because he has been questioned so much he has been Couèd into telling a story which doesn't exist. The answers of such patients remind me of the story of the negro, who, being examined by a certain physician, was asked if he had ever had a certain disease. "No, sir," he replied, "and I hopes I never has it again." I was interested in learning from Dr. Maes what makes surgeons lazy, and in learning from Dr. Hickey why there are so few good radiologists. Dr. Menville is right when he says radiology is a consulting branch of medicine. Dr. Barrow called attention to another most important factor in correct diagnosis; I don't think we should have any knowledge of what the clinician suspects. The worst errors I make are made when I know what I am expected to find. That is the reason gastro-enterologists who do their own radiography fall so frequently into error; their judgments are warped by what they suspect in the picture. I cannot close without differing with Dr. Hickey on one point; he said it took all his diplomacy to answer a certain type of letter. Nothing in the world ever took all of Dr. Hickey's diplomacy.

THE PLACE UROLOGY BEARS TO THE GENERAL SURGEON.*

M. L. FLYNT, M. D.,

NEWTON, MISS.

Some of you may have the opinion that a general surgeon should not delve into the field of the specialist. But we, as general surgeons and practitioners, come in contact with so many urological cases requiring diagnosis. Because we are located in the smaller towns and rural sections and do not have access to a urologist it becomes necessary for us to acquaint ourselves with this subject, and to diagnose and treat these cases. So I am prompted to attempt to bring you a short paper on this subject.

Urology as a specialty has been a late development. It has been only thirty-six years since Dr. James Brown was the first to successfully catheterize the male ureter; only a few months later Dr. Kelly gave us his important contribution in cystoscopy and ureter catheterization in the female. In the short period of time since there has not been more important progress made in any other field of medicine.

The discovery of the cystoscope, together with roentgenology and pyelography has added a valuable spoke to the wheel of progress in medicine and surgery. In order to minimize the chances of an unsatisfactory result or failure after operation on the various intra-abdominal viscera, the general surgeon must never overlook the genito-urinary tract.

How many of us would be willing to plead guilty to the removal of a chronic appendix with unsatisfactory results, having the patients return later with the same pain, and finding some urological pathology responsible for the trouble?

Our knowledge of the causes of colic ureteral pain has made much progress during the past ten years. Formerly it was

taught that aside from the moving of a ureteral stone, or kinking of the ureter by sudden ptosis of an abnormally mobile kidney, one could forget the other causes. We now know that a number of additional causes can give rise to the clinical syndrome, and in the absence of localized rigidity and tenderness, be easily confused with an attack of acute appendicitis. The chances for such a mistake in diagnosis will be evident when we recall that the group of symptoms of ureteral colic resembles that of acute appendicitis in many respects. A diagnosis of appendicitis, or any other condition in the abdomen, should never be made and an operation performed without a complete urinalysis of a fresh specimen. And if the patient is a female, this specimen should be secured by catheter.

In all acute abdominal conditions, pain is the paramount symptom. The differential points in diagnosis are to be secured from the history and physical examination. Even then, in doubtful cases, we are compelled, and advisedly so, to resort to speedy exploration which renders our patient less harm than too long delay. But I want to insist that too much stress cannot be laid upon the importance of a routine urinalysis, for by so doing pyelitis or pyelonephritis and other pathological conditions in the urinary tract can be picked up which will either contra-indicate, or limit surgery, or decide the kind of anesthetic best suited for the case in hand.

Some urologist has said that at least 50 per cent of cases of right-sided urinary pathology have had one or more abdominal operations before a diagnosis was made. This is a tremendous indictment against good surgical diagnosis, and should not be true in this day of medicine and surgery, because of the many adjuncts and advantages we have in making diagnoses.

If a patient comes to us with all cardinal symptoms of appendicitis, such as pain, nausea and vomiting, slight abdominal dis-

*Read before the East Mississippi Medical Society, April 18, 1929.

tention, increased leukocyte count, but lacks the localized rigidity and tenderness, and spasms of the right rectus muscles, our attention should be called to the possibility of some trouble in the genito-urinary tract. And here is where our microscope, cystoscope, and roentgen ray plays a valuable part in guiding us to the proper procedure. This is especially true in chronic cases, because urologic conditions will give exactly the same symptoms as chronic appendicitis.

Kinks, strictures, and stones in the ureter, and sometimes chronic nephritis and pyelitis will cause attacks of fixed or radiating pains, just as readily as chronic appendicitis, and such attacks may not be associated with nausea and vomiting. In acute kidney lesions the temperature usually runs a higher course than in acute intra-abdominal conditions. Chills, or rigors are much more frequent, and as a rule the pulse rate is much lower. The pain does not radiate to the scapular region, as in gallbladder pathology, or to McBurney's point, as in appendicitis. It is well localized, and is referred to a point about two inches above the anterior superior spine of the ilium, or downward along the course of the ureter, with marked rigidity and tenderness in the costo-vertebral angle.

Pyelitis, hydronephrosis, and hydronephrosis with infection, are among the most common of kidney diseases.

Dr. Abraham Samuels of Baltimore wrote an article in 1926 on hydronephrosis in which he says that in three hundred patients, he found hydronephrosis by far the most common. He says further, that not only is it one of the most common diseases of the kidney, but the least understood, and the most frequently overlooked.

Anatomically, the kidney may be divided into two parts: a parenchyma for filtering the fluid, and a pelvis for storing the fluid that has been filtered from the blood stream. Normally, the pelvis is never filled and never entirely empty. It holds from

2 to 5 c. c. of urine. The pelvis empties its contents into the bladder through the ureter by a wave of muscular contractions, and anything to cause an obstruction to the outflow of urine down the ureter will cause hydronephrosis. The most common obstruction found is stricture, which may be found anywhere in the course from pelvis to bladder, but most commonly found at the uretero-pelvic juncture.

Stones are also common causes for ureteral obstructions, causing hydronephrosis, and they also may be found anywhere along the course of the ureter, depending on the size of the stone. Large stones most frequently lodge, and become wedged in the ureter, at the uretero-pelvic juncture, and unless relieved, the patient soon becomes acutely ill, and at times the diagnosis confusing.

Here I would like to report a case:

At my previous location I was called early one morning by one of my doctor friends in an adjoining town, telling me to have the operating room ready that he was bringing a case of acute appendicitis. In due time he arrived with his patient, who was a real sick white lady, about 40 years of age. Her symptoms were so very acute, and the entire abdomen so tender and rigid, that one would believe on observation that she had a perforated duodenal ulcer. She had been taken sick the day before with pains in the abdomen, nausea, and vomiting, and was still vomiting when she entered the hospital. Her leukocyte count was high, and urine negative, with the exception of about three or four pus cells per field. Her temperature was 102°, which was rather high for appendicitis.

We advised her, and her husband, that she had a very acute abdominal condition, and needed immediate operation, but we were not certain as to what we would find. We made a high, right rectus incision, and explored the abdomen. The appendix was abnormal, but not sufficiently involved to warrant all her symptoms. The stomach, gallbladder and duodenum were negative. But there was a large mass felt in the region of the right kidney. The appendix was quickly removed, and the abdominal wound closed, a right lumbar incision was then made. The mass was found to be a hydronephritic kidney, about the size of a large coconut. A stone was felt in the ureter at the uretero-pelvic juncture, and in trying to

milk it back up into the pelvis, the sac was ruptured and a large quantity of urine, together with the stone, was expelled from the wound. We did not attempt to close the opening in the pelvis of the kidney, but placed a soft rubber drain to the bottom of the wound, and closed the wound in the usual manner. The patient made an uneventful recovery, but was very much dissatisfied with two incisions.

We did not expect to find the hydronephritic condition, and it is possible we could have relieved her temporarily, at least with the cystoscope and ureteral catheter. But the stone was of such size it is doubtful whether or not it would have passed through the ureteral canal. And, too, I believe the drainage was an advantage to the kidney in restoring it to the normal function.

A hydronephritic kidney, unless soon relieved, undergoes pathological changes in both the parenchyma and pelvis, which soon destroys the kidney. Retention, or stasis in the renal pelvis is not unlike a retention in the bladder, it soon causes irritation and furnishes a fertile field for bacterial growth and infection.

Cystitis and pyelitis, so often found in post-operative cases, is not a result of catheterization as was once thought, but more often caused from the lack of the use of the catheter, and failure of the bladder to completely empty itself. We should never allow our operative patients to go too long without emptying the bladder. If they fail to void in eight hours after operation, a catheter should be used, and each time the catheter is used, the bladder should be irrigated with boric acid solution, and 30 or 60 c. c. left in the bladder.

Hydronephrosis, hydronephrosis with infection, and pyelitis are frequent complications of pregnancy, and many times a very serious complication, often unrecognized.

In a recent article published in the *International Surgical Digest*, Dr. Carl W. Eberbach makes the statement that in pregnancy, autopsy, as well as urographic studies have shown that in nearly a third of all cases there is a dilatation of the ureters. In pyelitis of pregnancy the ureter is always dilated, and the gross pathological picture is that of chronic pyelitis.

Unlike chronic pyelitis from other causes, however, the dilatation frequently disappears when pregnancy is ended. There is no doubt but this dilatation is the result of pressure on the ureters, which causes a stasis, and this stasis, as previously stated, causes irritation and infection. The colon bacillus is the organism most frequently found, but other bacterial organisms may be present.

These acute cases of pyelitis of pregnancy may become dangerously ill unless relief is soon had, and I know of no other serious condition for which we can do more, and do it more quickly. Cystoscopy, with pelvic drainage and lavage will soon relieve the acute symptoms. In several cases I have left the catheter in the pelvis for several hours, and in a few cases I left it in for one week, thereby getting constant drainage and frequent lavage.

In addition to drainage and pelvic lavage, these patients should have fluids plentifully by mouth or by hypodermoclysis. The knee-chest position at frequent intervals, or elevation of hips and rest in bed, are of value in relieving possible obstruction.

Dr. Brasch, of the Mayo Clinic, makes the statement that in his study of over two thousand cases of chronic infections of the upper urinary tract, only one-third of all cases get well when treated by all methods. One-third improve, and the other third grows progressively worse. If this be true, and I am frank to accept his statement, how important it is for us to be on our guard for these infections and catch them in their early stages. In treating these conditions I believe our guns should be trained on the invading organism from every angle, and we should not depend on one so-called specific drug to cure our patient.

Many advocate urotropin in large doses, and I use it, but it has been proven experimentally to be inert. The same thing is true with hexylresorcinol.

Young believes in mercurochrome given intravenously, and has had a wide experience in its use. I have used it in several cases with seemingly splendid results, but in most cases have had a most severe reaction. Mercurochrome seems to have a specially destructive effect on the colon bacilli, and its use in this infection seems to be more effective.

The vaccines have been used by many with spectacular results in some cases, but they are uncertain, and usually fail. Water is the best diuretic we have, and the adult patient should have 120 ounces per day. I am of the opinion that with this alone for internal treatment, together with kidney lavage, rest in bed, and daily evacuations of the bowels, most of our acute cases will get well.

Prostatic disease is a urologic condition frequently met with by the general surgeon, and a condition that carries with it a high mortality, even under the modern methods of handling these cases. In the study of the prostate, it is not the obstruction, but what the obstruction does that causes the alarm. It is similar in some of its aspects to obstruction in the intestine. It is not the obstruction *per se*, but it is what the obstruction does that creates the damage. The patients die from secondary changes and the sequences which the obstruction produces.

The prostatic patient comes to us at a time when his vascular system is not at its best, when his cardiac apparatus is beginning to fail, and when his renal function and other parts of the system also begin to show changes. He may have a prostate very much enlarged, or it may be just large enough to keep him from completely emptying his bladder, which results in gradual back pressure upon the kidney, interfering more and more with the output of blood urea.

Proper preparation of such a patient is the most important feature in his treatment for relief of the obstruction. It is much more important than the physical removal of the obstruction itself. The first thing necessary is to re-establish the normal balance of the individual, as near as possible. To do this we must arrange some method to empty the bladder and keep it empty. If the patient has acute retention, the urine must be withdrawn gradually. The bladder should gradually empty itself under pressure.

I do not believe we should spend much time trying to pass catheters in these cases. However, when a rubber catheter will pass the obstruction easily, it is the best and quickest way to relieve the acute retention. A metal catheter should never be used, as it causes tissue damage, and opens up new fields for infection.

In complete retention, it frequently becomes necessary to empty the bladder by suprapubic puncture, with trocar or by cystotomy. The trocar is better as it enables us to control the outflow. If the trocar is not used, we can place a couple of sutures in the bladder wall before the opening is made, and tie snugly around a catheter, after it is passed through a small opening into the bladder. In this way we can control the outflow of urine. Later the opening is made larger and a Pezzer's catheter placed within the bladder for drainage, until the patient has returned to as near normal as possible, before the gland is removed. His blood urea and kidney function should have returned to near normal.

After the removal of the gland, if the patient survives the operation, we make him fifteen years younger, and put him back into pleasant and active life again.

ARE WE SUFFICIENTLY PROGRESSED
SCIENTIFICALLY FOR THE LEGAL
SEXUAL STERILIZATION OF IN-
MATES OF STATE INSTITU-
TIONS IN CERTAIN CASES?*

CLARENCE PIERSON, M. D.,

ALEXANDRIA, LA.

My answer to this interrogatory is unhesitatingly "No".

From our present knowledge of feeble-minded and other allied mental abnormalities, we cannot accept the general law of sterilization as presented to and enacted by many of our sister states and in so few states practiced to any extent. Only a partial enforcement of this law is calculated to impede our progress and dwarf our activity and interest in the study of this sociological and scientific subject that has made such intelligent human strides the past few years.

I sound a warning to you not to be misled by this exultant and exuberant wave of popular acclaim. Be calm and patient therefore, and be guided in your judgment and actions by your own study of the subject and by those whose years of thought and toil and vast experiences have unselfishly and without bias reached a contra conclusion.

Fifteen years ago, officially and otherwise, I advocated legal sterilization as a means to gain an end; at first blush I thought I saw one possibility for birth control of certain undesirables. Maturer thought however, and the experiences of more capable thinkers and workers, has convinced me of my error, hence, the above warning.

In presenting this subject it is useless for me to go into details as to the surgical procedure necessary for successful sterilization of deficiencies and undersirables. Eugenic sterilization is recognized as a surgical

operation for and a medical treatment of the reproductive organs of the human male and female, by which the power to reproduce other humans ceases permanently. The surgical route is vasectomy and sapin-gectomy, to the male and female respectively, as opposed to castration and oophorectomy.

Eugenics is as yet in its infancy. The laws of Mendel (1864) were revived with renewed interest and intensified thought. Sir Francis Galton's "Possible Improvement of the Human Breed" (1910) awakened anew public thought and scientific investigation. Goddard's publication of the Kallikok family directed a new channel of thought towards the complex of all complexes, "Heredity". His statistics supplemented by the "Jukes Dynasty", confounded other investigators and directed the professional and lay mind to a broader and deeper study of defectives, of feeble-minded, etc., etc.; their control and treatment presented to our ablest economists the stupendous responsibility of the care and employment of this large population.

The timely concept was then that the great preponderance of cases of mental defects was the result of inheritance. Many are of the opinion that present day knowledge concerning heredity in its relation to mental deficiency is all scanty and that it is quite impossible to predict with precision the type of offspring of any given mating. Further, the deficiency of a child born of a feeble-minded mother may be due to early environmental factors and not necessarily the result of the inheritance of defective germ plasm. A faulty germ plasm by one or both parents was supposed to cause practically all cases of feeble-minded. To-day we believe a large per cent are due to other causes: for instance, to some natal or post natal conditions; birth injuries; infectious diseases; endocrine disturbances, etc., etc.

Today it is believed that less than 50 per cent of such cases are due to heredity. The

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criminal tendencies of feeble-minded are actually much less than originally supposed.

Our present birth rate; our excessive taxation and the number of unemployed, sentiment and ignorance, should not be allowed to interfere with some means of care and treatment, by which to produce an imbecilic pregnancy would be arrested. If left unprotected and unguided, their lack of stability and control may lead to serious crimes, such as theft, arson, assault and even murder. In this inability to maintain themselves vagrancy and destitution and want is their finality; in other words, a complete physical and moral collapse as well has taken place.

Simultaneously (1910) with Goddard's special work, the Simon-Binet psychological test was an attempt in this country to reduce to mathematical accuracy the grades of intelligence and the number of feeble-minded in proportion to our population. This practical visualization has its effect upon our entire social and professional fabric. This might truthfully be termed the alarmist stage. Eugenic sterilization had its borning at about this time; fads and fadists with ample supply of funds came to the front; enthusiasm for eugenic sterilization overshadowed the truth of the subject. The old human ship is still tottering and dangerously rocking. Eugenic and biological laws, Mandelian theories, Darwinian ideas were all combatted to such a popular extent that statutory laws by states were passed to arrest the growth of feeble-minded, mental abnormalities, defectives, etc. National and state eugenic societies were presented, high-salaried and high-powered executives were put in the saddle; philanthropists, affluent, "far-sighted citizens" have been enlisted; ample funds have been made available. Some remedy must be found. Indiana (1907) had already led off with its sterilization law, Washington State followed, then California; big New York acted likewise, but soon repented by the repeal of the law. Approximately 35 states enacted

sterilization laws before taking a breathing spell; only a few today are active and operating. California proving the exception has shed lustre by its eugenic sterilization activities. Between 1909-1928, 5,820 citizens were sterilized.

3,232 men.

2,705 insane.

527 feeble-minded.

1 in every 22 (of a total of 445) of abdominal operations, were complicated surgery.

Primary union in all but 6.5 per cent and wound infection 2.2 per cent.

No mortality since 1920 in 3,000 cases. Comment is unnecessary. Paroled after sterilization and recovery physically.

Sonoma State Hospital—Boys, 72 per cent; girls, 65 per cent.

Dr. Fernold, at Waverley, Mass., in a quarter of a century paroled 60 per cent of boys and girls. A sterilized individual would not be less likely to these happenings than one not sterilized; a sterilized woman would be more prone to illicit intercourse, to prostitution and to a spread of disease.

Virginia has recently been in the lime-light. The Supreme Court of the United States has held that Virginia's sterilization laws is valid. "A state has the right to sterilize its citizens for its own good." At last year's meeting of the American Medical Association, at Minneapolis, the section on Obstetrics, Gynecology and Abdominal Surgery recommended that that association organize and take part in an impartial and thorough investigation of sterilization from the viewpoint of Medicine, Surgery and Preventive Medicine.

The Central Association of Mental Welfare of England (Dr. Tredgold, the leading factor), of the most representative body of medical and lay men and women, are unanimous that sterilization might be appropriate in certain particular cases; it would have little effect in the prevention of mental

deficiency but would lead to serious social evils.

The American Association for the Study of Feeble-minded is not in favor of sterilization except in certain fixed cases.

The National Committee for Mental Hygiene has never been able to endorse or encourage eugenic sterilization; all of its teachings have been against it as circulated in "The Bulletin."

The great Harvard University not long ago refused the bountiful bequest of \$50,000 to have sterilization taught in college. Evidently the pendulum swings back and forth. "Oh, Society! Where is thy goal?" If sterilization be a needful law, let it be mandatory and not optional upon the officers in charge of the patients, and only after segregation was impossible and when institutional patients are about to be returned to community life.

In some states sterilization laws specifically exempt superintendents and managing officials from all liability, civil and criminal, on account of state participation. This is the joker in the law. Why this exemption or protection if the law be founded upon medical and scientific knowledge and with the approval of society? Why subject the participants to these hazards? A sterilization law would make patients hide out by parents. Sterilization as a punitive measure at first was admitted, but it latterly abandoned its procedure. The Virginia law is in point. The trend is to apply eugenic sterilization at first to the feeble-minded; to idiocy; to imbecility; to epilepsy; then to insane hospitals with hereditary forms of insanity that are recurrent: (Illinois today has such a bill before its legislature)—then to almshouses; to country and city jails, ad infinitum. . . . Such a great number of sterilized subjects would soon lead again to segregation. The life of segregation in colony life properly manned and equipped, insures greater happiness anyway with congenial occupation and close fellowship.

The mooted question is yet with our profession and with our lay-brother generally, is eugenic sterilization of the unfit—(and I use the word *unfit* guardedly)—the rational process today? Is it scientifically well grounded? Is the operation per se always safe guarded?

Is the operation per se in certain states legally recognized? Is it the scientific panacea for our social uplift or the means of cessation of the multiplication of our human maladjustments? Should the process of sterilization be applied only to authenticated cases only of feeble-minded? Should sterilization likewise be practiced legally among the insane as contradisposed to the feeble-minded? Why not then, should sterilization be mandatory of a large number of inmates of our penal institutions.

Why not, following in sequence this supposedly public sentiment, the same legal procedure to confirmed alcoholics, dipsomaniacs, or to our troublesome psychopaths, to all social misfits and maladjusters, ne'er do well, if you please? They are not insane nor feeble-minded, professionally so recognized.

Public opinion should be against sterilization on scientific and humanitarian grounds. The question of doubt as to diagnosis and prognosis is the fine line of demarkation of reproduction properties; on immorality grounds, because of prostitution, venereal disease; also because of doubtful question of gain by heredity influences.

Mr. President, I vote, "No."

CONCLUSIONS.

More scientific experiments and study of the subject by qualified, experienced lay and professional authorities.

Continued segregation of the feeble-minded and mental social derelicts, favoring colony system with improved professional and administrative facilities.

Eugenic education of the public.

More restrictive marriage laws and customs.

Expand the scope of knowledge of the subject by greater publicity and greater mental hygiene organizations and teachings.

DISCUSSION.

Dr. A. A. Herold (Shreveport): My good friend, Dr. Pierson, was kind enough to ask me to discuss this paper. While it is certainly within our province to say that we do not agree with an essayist, it may not be very polite. However, I feel Dr. Pierson wants me to express my views in unequivocal terms and for that reason, Mr. Chairman, I vote "Yes." I vote that if only for sociological reasons.

It has been brought out that if the population on earth continues to increase for the next 100 years as it has in the past few hundred, according to statistics, after that time we will not be able to produce enough food in the world to feed all of the people. Of course, we needn't worry about that. Birth control is coming; it is here in some localities, and if we have to control the birth rate, why not control it with the unfit rather than with the fit?

To my mind, the only cogent reason for objecting, and one that Dr. Pierson brought out, is the same as would be applied to Euthanasia; that is, that the law may not properly safeguard. Of course, the law should be properly drawn if we have such a law. There is always possibility of fraud. There may be some cases where, in spite of all the safeguards, questions of spite and hate may enter into it and the wrong people may be treated in this way.

The question of heredity and environment is always an interesting one, and one which we will never decide, for, as Dr. Pierson says, it is a most perplexing question. I know of one instance of a very dishonest man, who formerly lived in my city, all of whose children were thoroughly honest; at least, they had that reputation. One of the daughters married a high-class gentleman. Yet the oldest son, who never associated with his grandfather, was of the most dishonest type imaginable. I claim this is a question of heredity, just as we heard Dr. Matas the other night speaking of inheriting cancer. We inherit the soil. The tendency to the condition is inherited. If a tendency to physical conditions is inherited, why can't a tendency to a mental condition be inherited? Insurance companies invariably ask the question, "Has there been any tuberculosis, epilepsy or insanity in the family?" They seem to think, the consensus of opinion among the life

insurance directors is, that there is a tendency to inherit these diseases.

Dr. Pierson speaks of paroling. That is a practice that we all know all over the country, paroling these inmates. Very often they are returned and perhaps they have already propagated offspring before they return. He refers to the dipsomaniac and other classes of people who are undesirable. Why not let it apply to them? I say, "Yes, why not, in the severe cases?." They should not have offspring. They should be classed with the mentally unfit.

Perhaps I am a little radical in my views on this question. I differ with my good friend, Dr. Pierson, but I differ honestly with him. I feel we need such a law properly safeguarded.

Thank you.

Dr. C. S. Holbrook (New Orleans): I must say that I take very much the same position that the last speaker did. I believe sterilization in certain cases should be applied.

Within the past year or two I have had an opportunity to examine a fairly large number of unmarried mothers, people who had never been in institutions, and considerably over half of these girls who were pregnant and delivered subsequently, were feeble-minded to a marked degree. I want to take that back for a moment. They weren't idiots, but they were of the moron type who were able to get along by working in some of the department stores, or work of that type, and yet who did not have sufficient inhibition to properly conduct themselves. I believe in some cases like that sterilization would be well worth while because most of these girls who started off in a life of prostitution will continue the life of prostitution. Sterilization would prevent feeble-minded offsprings and our orphanages would not be so crowded.

The whole trend of medicine today is prevention. The number of cases of feeble-minded that are taken care of by the state is ever increasing and the number of those who suffer from psychosis is increasing. I don't believe there is any doubt at all that the essential causes of mental diseases are heredity, syphilis, alcohol and other drugs, and brain injury. The careful obstetrician prevents a large number of feeble-minded children by not producing precipitate labors, not using forceps, not bringing about brain injury. The more syphilis that is properly treated, the fewer feeble-minded we are going to have.

I feel quite convinced that in well-established cases of feeble-minded, where both parents are definitely feeble-minded, the results can hardly be anything else except feeble-minded children. I am

very much of the opinion that sterilization will be well worth while provided it is properly safeguarded.

I have just within the month advised, and we have carried out, the sterilization of a young woman of normal intelligence who had recurring periods of insanity. These occurred each time she was pregnant. She had had two children. She had had two severe attacks of mental disturbance in which she had been in hospitals for six or eight months, and the probability was that she would continue to have these periods of depression throughout her life, and especially when she became pregnant. Also, these children bear a certain probability of inheriting an unstable mental endowment.

In this case the permission of the husband and of the individual herself was properly obtained and the necessary papers signed, and she was rendered incapable of becoming pregnant. I feel she is going to be able to return to her family, keep it intact, and not bring into the world any other children who are apt to be mentally disturbed, and she is going to be very much happier.

This sort of thing will multiply. I don't believe we should go out and operate on every patient, but there are certainly a number of cases where it will be beneficial, and I am very much in favor of sterilization when properly safeguarded.

Dr. W. J. Otis (New Orleans): We should not allow ourselves to be deluded by the tomes of nonsensical literature that are on the market concerning the mentally defective. I have reference to the so-called sociological and eugenic volumes printed for aggrandizement, merely culled statistics that do not bear research. There are some powerful monographs in print on the subject of so-called eugenical sterilization.

From what I can gather, and what data I have received, both in the United States and from magazines, national and international, our civilization has not progressed sufficiently to determine who will be sterilized by law. Have we not enough autosterilization in our civilization as it is? This is especially for the physicians, and the lay people can grasp what I mean, of course.

Walter Fernald, who may be called the patron saint of the mentally defective, has told me on several occasions, personally, "Doctor, sterilization will not prevent mental defectiveness," and very laughingly said: "Who will we sterilize?" These individuals are here not of their own free will; they are here because of a means to an end. Sterilizing the prostitute will not stop her prostitution. Sterilizing your bandit will not stop him from being a bandit when he serves his

prison term, or what-not, if you are going to include those in the law.

There are types of mental defectives who should be segregated, so why sterilize them? If you segregate them properly, if your institutions are properly handled, if your states properly take care of them from the economic standpoint, why sterilize them?

The Association for the Study of Feeble-minded says, "Where are you going to get the individual, except casually?" You sterilize your individuals, and if there is a spark of moral sense left they become more promiscuous. Your prostitute will say, "I have been declared below normal by law. Go ahead; I know what is happening to me—the House of the Good Shepherd or the jail; I will get thirty days. When I get out I am going to do the same thing because the law will tell me society has been appeased; I have been sterilized and I can't conceive any more." The male who has been sterilized will say approximately the same thing.

Those are the questions. The economic situation seems to be the bone of contention in legislatures. We don't want these people in our institutions. They tell you in one breath that they are not fit to be out; nevertheless, they will take them in, sterilize them and send them out again into the world. There are a number of people in good neighborhoods, that we know of, who are in good families but who, if brought to the test, would probably be high-grade or middle-grade, but who are taking care of themselves and their families, and we never heard of their economic situation. These things should be taken into consideration when the question of sterilization comes up.

Yes, some states have sterilization laws. As Dr. Pierson says, California is blossoming like the orange blossom that comes out on the trees. Why? The state isn't paying for that. One or two philanthropists are doing it. Again, I say to the medical men, there is enough autosterilization going on in the world today, and if we continue this where will our civilization be in the near future?

Dr. H. B. Gessner (New Orleans): This is a subject on which I am not well informed, but fortunately for you I am aware of the fact so that you are not in any danger of any long talk on the subject.

Dr. Guthrie has practically called on me to talk about this from the surgical viewpoint, but I want to take that liberty which speakers at a banquet take. You all know that a speaker at a banquet is assigned a subject and he proceeds to talk about everything in the world but that sub-

ject, so I am not going to talk about the surgical side.

I am going to refer briefly to an argument that has been made against sterilization of the feeble-minded, the logic of which has never appealed to me; that is, the argument that the sterilized feeble-minded woman will be used for illicit purposes. As a matter of fact, she is used for those purposes, and the result is that she reproduces her kind. The final result is that she has feeble-minded children to give the world, and these again replenish the ranks of prostitution.

It seems to me if you sterilize the feeble-minded woman she will be used for immoral purposes, but after she has been used for that purpose, and finally dies, she will leave no girls behind her to be used for that purpose. That is the way it seems to me, and I have never seen that argument answered. You are done with her, then, once for all. I should like to know when Dr. Pierson takes the floor whether he can answer that argument.

Miss Jean Gordon: I don't intend to discuss it from the medical standpoint. I am going to show the desperate need for sterilization from the economic standpoint. I acknowledge to over forty years that I have worked in the charities of this city, and there hasn't been a thing started here that I haven't had my share in. I stand here to speak as an expert from that viewpoint, and I tell you we are swamped right today from the charity standpoint due to the feeble-minded men and women, particularly the women.

We cannot go on having women each bring into this world eight and ten feeble-minded children for us to keep on supporting. They are now trying to get up a mothers' pension to take care of these people, which will, in turn, only increase the charity problem that much more, because I know enough of the feeble-minded parent to know he would encourage his feeble-minded daughter to have children in order to get a pension. I have had it right in my own little institution, which is simply a little demonstration farm.

I had found that the people of this state didn't know what feeble-mindedness meant. The Chief Justice of the State of Louisiana did not know. I went down to the Supreme Court in my shabby little automobile and invited them to come out to Milne Home. They have had a different viewpoint on the subject and won't give a decision such as they gave one time when I took a case into court. The case was appealed to the Supreme Court, and of all the fool decisions that were ever written into the statutes of Louisiana the biggest fool one was the one given on that case when they let that girl out of Milne Home

institution and who, in five years, had added three more illegitimate children for you all to take care of. There is the point I am arguing it from.

We have got to recognize it from both sides. If we are just going to go on and let the feeble-minded procreate—if you all agree that procreation is "an inalienable right"—then, I have nothing further to say. I don't agree with that whether it is scientific, medical or economic. I don't think fatherhood and motherhood is "an inalienable right;" it should be regarded as a great privilege and honor.

Doctor, I wish you wouldn't keep quoting Dr. Treadgold. He has been dead for the last twelve years, and dear Dr. Fernald has been dead for three years. I give him credit that had he lived he would have seen the light, as did his successor, Dr. Little.

In California there have been 8,622 operations and but one death due to a crazed woman pulling off her bandage. That comes to me from Dr. Butler of Sonora. Dr. Otis' statement that California is being supported by a millionaire (Mr. Pozney, I suppose he alludes to), is not altogether the fact. California has appropriated a very large sum to Sonora hospitals where these operations are going on.

I want to ask, and I hope Dr. Pierson will answer this: Have you ever seen a normal child born of a feeble-minded mother? That is a scientific question, is it not?

I know of one woman who has seven children. I will use that as an illustration. I told you all about her at the legislature. A nice, dear, sweet, loving character who has had seven children, all by seven fathers. Of course, companionate marriage may be all right, but I don't think so. All of the seven children went to St. Vincent's. As they grew old enough, the boys went down to St. Mary's, and the girls were put out here in Sacred Heart. The mother was brought to me. That is four institutions. Under this cruel system of putting a girl out at eighteen without any mental test, Ma Cary's eldest daughter was put to work in a department store to make her living. Inside of three months she was in a maternity ward nearly dead from an abortion. Unfortunately, you doctors cured her and brought her back, and she is now in the House of the Good Shepherd. Oh, yes, the boys have now been sent up to Alexandria, the State Colony. There are seven institutions taking care of the progeny of dear, nice Ma Cary. Do you think that is either scientific or economic?

Dr. R. McG. Carruth (New Roads, La.): I want to say that I was glad to hear my friend,

Dr. Pierson, say at the beginning of his remarks that he had changed his opinion on the subject of sterilization, since it relieved my mind. I did not know what to think some months ago when I learned that he had changed his attitude on this subject. I always thought Dr. Pierson and I agreed so perfectly on the question, but I learned last summer that he had gone before a legislative committee on the sterilization bill and had opposed it. When he was interviewed on the subject as to why he opposed it (this is what I learned through two or three different persons), he remarked that he had not opposed the bill directly nor had he gone there to fight the bill, but he had simply given some facts and figures. Now, one of the greatest statisticians in the world today, the man most trained and experienced in collecting data of this nature, Irving Fisher, has said, "You can prove anything by statistics, sometimes even the truth." So it would seem that it depends on how you get your facts and figures, from what source you get your facts and figures and for what purpose you compile your facts and figures—yes, all of this, when it comes to summing up results. If you go to nature with unbiased mind, seeking the truth, you will generally find the truth, but if you go with a preconceived hypothesis seeking to prove something that you want to be proved, you may, in time get together a sufficient amount of data to lend to grossest error the color of truth.

As said before, since Dr. Pierson admits having changed his opinion, it has relieved my mind and I feel very much better satisfied. I feel now that we can both play the game—as I have always done—with our cards lying face up on the table since we shall have nothing to conceal from each other. As Dr. Pierson knows, I have always favored a hygienic marriage law that would prevent the propagation of the unfit. But I soon found that the same group of people who were fighting sterilization were the ones who were fighting from A to Z against a law that would prevent the marriage of those reeking with gonorrhea or foul and decrepit syphilis! They generally work together; they stand for the same thing. I do not say that Dr. Pierson is opposed to a hygienic marriage law (I want to be distinctly understood), but it is usually the same class, the same group who are fighting sterilization, who have always been opposed to any kind of hygienic marriage law.

But to return to Dr. Pierson's paper—I do not think there is a fact he has mentioned, a truth

he has quoted, an argument he has used that cannot be thoroughly discounted by consulting the records, reviewing the individual case histories on file in our large prison and insane asylums.

Nothing that can be said can outweigh the fact, known to all students of criminology, that 51 per cent of the crimes committed in the State of Indiana during the present generation has been committed by the descendants of one hundred families transmitted by unerring and inviolable natural law through their genes and chromosomes to their monstrous but helpless offspring! Equally convincing and unanswerable are the facts that come to light by a glance at the tabulation of case histories at the East Louisiana State Hospital at Jackson. In a painstaking search of the records there a few years ago, by my friend, Dr. T. J. Perkins, late superintendent of that institution, he showed us where our insane come from. I hold in my hand his tabulations, but time will not permit me to read them. These records show that just certain families carrying in their blood streams these infirmities have served as feeders to that institution since its foundation. I mention only these two examples—one from prison records, the other from an insane asylum; but with slight differences as to detail, the same is true everywhere. I am giving but a fair index as to the deplorable conditions that obtain.

And you gentlemen know too well I have been sounding this warning for years. And I here beg leave to repeat: we are going the way of the Egyptians. We are in the hands of the morons today. Our civilization is tottering to its fall and sterilization of the unfit is the only hope of the race.

Dr. Clarence Pierson (closing): I am sorry, indeed, that I haven't a week to answer my good friend, Dr. Carruth. We have had so much in common!

There is only one proposition we are discussing. The chairman rightfully has called your attention to that—the legal aspect. I have never said I was opposed to sterilization, *per se*. That is the answer to your question, Dr. Gessner. To put a sewer from the Roosevelt Hotel to the Gulf of Mexico would not affect the Gulf of Mexico one bit.

My proposition, and the only proposition involved, is: Shall we make it legal, and shall

sterilization be the only remedy. I thought somebody would give me a remedy for these social conditions of today. Nobody happened to ask me that question, if I had a remedy for the social conditions of today. This law is the only proposition proposed by some.

Whether or not you are familiar with the verbiage of the law, it is a repetition of the act and is taken from it. Every state had introduced the same stereotyped law; the same viewpoint. There may be a change of a comma or a period to suit local conditions, but they are all essentially the same thing.

The purpose of this paper was to bring out a broad discussion. If sterilization is going to save the human family, I am in favor of sterilization. I am frank to say I want results. I have always worked for results. It is not because a horse is said to be seventeen hands, he has to be seventeen hands, but it is the question of the best deliberate judgment for the best people of our country, whether or not this is the proper course. Every discussion has been, "if," "provided," "but," and "for certain conditions." Certainly there are applicable cases for sterilization. We have all sterilized cases. I have sterilized cases myself for surgical necessities. The question is whether or not, as California is doing, *per se*, that is the remedy for that condition.

As I said to Dr. Gessner, the fact that the woman is sterilized is merely a drop in the Gulf of Mexico.

I was asked a specific question by Miss Gorden. Yes, I have seen splendid normal children who have gone out and made a success, but whose mothers would be classified as feeble-minded. They are children today from eighteen to twenty years old.

Dr. Holbrook raised a question. I have seen individuals come to hospitals as many as three, four and five times. I know an elegant lady now who has gone home four separate times and in the interims raised a fine family.

If we had practiced this law, some of your greatest war heroes, lawyers and literateurs would have been lost to the world had we sterilized their mothers or their fathers.

SOME OBSERVATIONS ON PAROXYSMAL AURICULAR FIBRILLATION.*

RANDOLPH LYONS, M. D.

NEW ORLEANS.

Attacks of palpitation are such common occurrences that not infrequently the physician in taking a history simply jots down their presence without further thought. In women, they are attributed to nervousness and emotionalism and in men, perhaps, to indigestion, too many cigarettes, etc. Not infrequently no special effort is made to determine exactly what the patient means by "palpitation." To the laymen, palpitation may be simply the subjective consciousness of his heart beat—noticed especially on lying down. Again it is described as a rapid heart action or fluttering or, perhaps, a rapid and irregular heart action, varying in time from a few minutes to hours. In the longer attacks medical attention is apt to be demanded, particularly if the seizure is attended by symptoms of weakness, shortness of breath or apprehension. During the past few years I have observed a number of patients who suffered with attacks of so called transient palpitation who proved upon further study to have paroxysmal auricular fibrillation. Some of these cases were known to have heart disease while others were not. Owing to the fact that many of these attacks were of such short duration, it was only possible to examine the patients in an occasional seizure. In the more intelligent patients careful questioning often elicited something of the nature of these attacks but all patients were instructed as to what symptoms and signs to be on the lookout for in order to be able to describe any future attacks. They were directed to note—(1) whether the attacks began and ended abruptly, (2) their approximate duration, (3) was the heart action simply more forcible or very rapid or both; and, (4) was the heart action rapid and irregular?

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

This last question is most important where there is a suspicion of fibrillation. In most instances patients were unable to answer this question definitely until they had had subsequent attacks. When this association of tachycardia and irregularity was noted by patients, special effort was made to see them during the paroxysm and, if possible, have electrocardiographic curves made.

In the elderly, arteriosclerotic individuals who, though previously apparently well, developed transient attacks of rapid, irregular heart action associated at first with dyspnea, oppression and weakness, a diagnosis of fibrillation could almost be made from the history alone. The same might be said for the patient with mitral stenosis of long standing although in such cases the attacks are only too frequently the precursor of permanent fibrillation.

Again paroxysmal auricular fibrillation is not uncommonly associated with toxic goitres but here the outlook is good if the thyrotoxicosis is relieved. Transient fibrillation is but rarely seen in normal hearts although cases have been described where it was precipitated by influences of nerve origin. Other factors such as certain drugs, foci of infection and toxic states may predispose to such attacks. There are a few forms of paroxysmal acceleration of the heart rate which should be briefly mentioned as they may require differentiation from paroxysmal auricular fibrillation. These are (1) paroxysmal auricular tachycardia, (2) paroxysmal auricular flutter, (3) paroxysmal nodal tachycardia and (4) paroxysmal ventricular tachycardia (Wil-lius).

Paroxysmal auricular tachycardia may be eliminated because here the heart rate, though rapid, is regular.

It is frequently not possible to differentiate auricular flutter from fibrillation without a graphic curve—except in those cases where the ventricular rate is regular (associated partial block). When such is

not the case, exercise may be helpful in separating the two conditions as fibrillation is not affected by it but flutter is apt to quickly assume a regular ventricular rhythm.

Paroxysmal nodal tachycardia is relatively rare and of no great clinical significance. It is rarely diagnosed except by the use of the electrocardiograph. In general, this form of arrhythmia does not give rise to rapid ventricular rates although a variation in rate may be noted, at times, where the control of the heart passes back and forth from the A-V and S. A. nodes.

Ventricular tachycardia cannot be differentiated from auricular tachycardia without graphic methods. In this condition the heart rhythm is essentially regular—thus differentiating it from auricular fibrillation.

BRIEF PRESENTATION OF A FEW ILLUSTRATIVE CASES.

Case 1. Miss E. W., governess, aged 62 years, seen March 16, 1924. Paroxysmal auricular fibrillation, chronic hypertrophic arthritis of spine, moderate aortic dilatation.

Cardiac history: Thirteen years ago she had an attack of palpitation. She remembers that the heart beat rapidly but does not know whether it was irregular. Previous to the present attack, she had been under considerable nervous and physical strain because of the illnesses of the children under her care.

Present attack began in the morning with rapid heart action, breathlessness and weakness.

Physical examination: Rather stout woman, nervous and apprehensive, pale. Temperature normal. Thyroid moderately enlarged. Pulse, 90, totally irregular in rate and force. Heart rate 140. Pulse deficit 50. Sounds at apex totally irregular in rhythm and intensity (delirium cordis). Heart not enlarged on percussion, sounds are clear.

Course: With rest, digitalis (72 drops of the fluid extract) and bromide, the fibrillation disappeared on March 18 (third day). Pulse and heart rate were 80, both perfectly regular. Blood pressure 140/85. During the following three years she has complained of transient attacks of irregular heart action associated with weakness. I was never able to see her actually in an attack. In November 1927 she complained of an attack of palpitation and I sent her to Touro Infirmary for

a week for observation. She had no attack while there. A roentgenogram of her chest and gastrointestinal tract showed a moderate dilatation of the aorta. Heart shadow was not enlarged. Gastrointestinal series was suggestive of a chronic cholecystitis. There was a hypertrophic arthritis of the spine. She has been in better health during 1928 but is still under observation.

Case 2. Mrs. P. H. K., housewife, aged 69 years, seen Jan. 21, 1927. Diagnosis:—Obesity, chronic tonsil infection, auricular fibrillation, myocarditis.

Cardiac history: In 1925 she had an attack of palpitation which lasted $\frac{1}{2}$ hour. It occurred at night and was associated with a marked diuresis. In the summer of 1926 she had another attack of palpitation while in bed at night. She does not know whether the heart action was irregular but states that it was very fast. She has been taking treatments for her throat during the past three weeks. This morning at 7:30 A. M., she had an attack of vertigo and rigors (no fever), became nauseated and vomited three times, palpitation present. She was seen three hours later. Color good. Temperature $98\frac{3}{5}^{\circ}$ Pulse 116, very irregular in force and rate. Heart sounds were irregular in rhythm and intensity. At the apex the sounds were short and valvular in quality. Slight pulse deficit. There was no apparent enlargement of the heart on percussion. No edema of the lungs nor feet. She received 5 digitalis tablets of $1\frac{1}{2}$ grains each and at 8 P. M. the attack was over. The pulse was 70, regular. The following day the pulse was 68, regular. Heart rate the same. At the apex, the first sound appeared short with a soft systolic blow.

On February 9, 1927 she had another attack of palpitation lasting about one hour. This occurred between 2 and 3 A. M. Two weeks later an electrocardiographic curve was taken. This showed a sinus arrhythmia. She had no attacks during 1928. On February 6, 1929 she had a slight attack of palpitation. It was not possible to witness this attack. As no graphic curves could be taken during these attacks, the diagnosis of fibrillation cannot be conclusively proven even though, clinically, the signs were quite typical.

Case 3. J. B. S., male, business man, aged 62 years, seen April 23, 1928. Obesity, auricular fibrillation.

Cardiac history: Past history is unimportant except for overeating, drinking and smoking.

During the early part of April, 1928 he began having attacks of palpitation and shortness of breath. He states that, at times, the dyspnoea was present without his being conscious of any palpitation. He had had an electrocardiogram

taken on April 5, which showed fibrillation. Under quinidine the fibrillation disappeared for a short time.

Physical examination: Large, stout man of plethoric type, nervous and apprehensive. Lungs are clear. Pulse 110, very irregular in rate and force. Blood pressure 140 to 160-110. Heart rate is 110. No pulse deficit. Heart rhythm is disorderly. No murmur audible. Heart is slightly enlarged to the left. Fluoroscopic examination shows moderate aortic enlargement and slight left ventricular hypertrophy.

Subsequent history: From April until the latter part of June, normal rhythm returned for a day or two on two occasions, once, while under digitalis therapy and another time while on no medication. In July he went to a sanitarium. There he was given digitalis again and put on quinidine. After a few days the fibrillation ceased for about 36 hours when it returned. The quinidine was increased and the heart became regular for 48 hours but began to fibrillate again after this. When seen on his return in October, 1928, the heart was still fibrillating but he felt no discomfort from it. He had lost considerable weight and looked very well.

Case 4. J. W. P., male, business man, aged 78 years, seen in June, 1926. Paroxysmal auricular fibrillation, chronic prostatitis, chronic bronchiectasis.

Cardiac history: He has never had any serious illness and has always been vigorous for his age. During the past five or six years he has suffered with chronic bronchitis in winter. Has had prostatic trouble for several years.

During the summer of 1926 he had many attacks of transient palpitation. He noted that his heart beat rapidly and irregularly but the seizures only lasted a few minutes. They were associated at first with a feeling of oppression, weakness and slight dyspnoea. After resting a while the symptoms would disappear and he would feel well again.

Physical examination: Well preserved, tall, active, elderly man. Peripheral vessels moderately thickened. Heart very slightly enlarged to the left on percussion and orthodiographically. Heart sounds clear. Aortic second sound moderately accentuated. No murmurs. Pulse 76, regular. Blood pressure, 140/65. Lungs are hyperresonant.

It was possible to see him in several attacks. During these the pulse was 120, heart rate 126, pulse deficit 6. The heart action was completely irregular. On January 11, 1927, he walked into the office fibrillating. This attack lasted long

enough to permit the taking of an electrocardiogram which confirmed the diagnosis. From this time on, attacks became longer in duration and more frequent until during the past year it has been continuous, requiring digitalization at times. The patient is fairly active and attends to his business.

Case 5. Mrs. S. C., 49. Seen October 17, 1924. Myocarditis, aortic dilatation, paroxysmal auricular fibrillation, acromegaly.

Cardiac history: She attributes her heart trouble to the shock of the burning of her home. Before this she had been told that she had Bright's disease and diabetes. No diabetes was found while under my observation. She states that the shock of losing her home gave her palpitation which recurs about once a week—the duration is several hours to a day or two. The heart seems to "pound" and is fast and irregular. She feels weak and has a "choking" sensation.

Physical examination: Large woman, fairly well nourished with large bones. Hands and head are large. Pulse 96, irregular in rate and force. Heart rate 120. Pulse deficit 24. Blood pressure 130 to 140/80. Left border of heart moderately enlarged to left. No murmur audible but cardiac sounds disorderly in rate and intensity. No edema of feet. Abdomen pendulous, otherwise negative.

Under Luminal and two days' rest in bed the fibrillation disappeared. On March 1, 1925, she returned with a history of slight attacks of palpitation weekly. Physical examination again revealed fibrillation and she was sent to the hospital where she was put to bed and given 66 grains of quinidine in five days without results. The following four days she received $5\frac{1}{2}$ drachms of Tr. Digitalis with no change in the cardiac rhythm. Then all medication was stopped except Luminal and two days later the rhythm was normal.

On February 11, 1926, a tonsillectomy was performed in Mississippi and following the operation she had to remain in bed for one month because of fast and irregular heart action. I saw her in March and July, 1926, and the heart was not fibrillating although she stated she had a number of attacks. The acromegalic signs were more pronounced and she had almost lost the vision of one eye.

During 1927 and 1928 she was seen three times and on each occasion the heart was fibrillating. The history suggests that it has probably been constant since 1928.

Case No. 6. Mrs. W. S. B., housewife, aged 26 years, admitted to Charity Hospital March 13, 1927. Rheumatic endocarditis, mitral regurgitation, mitral stenosis, paroxysmal auricular fibrillation.

Cardiac history: Rheumatic fever at seven years and subacute attacks at intervals of several years since. First heart attack eight years ago.

For over a year she has had attacks of palpitation associated with dyspnea but does not remember whether the heart was regular or irregular.

The present attack began three weeks ago with dyspnea, joint pains, fever and sore throat.

Physical examination: Orthopneic, cyanosed, teeth bad, tonsils enlarged. Heart dilated to the right and left. Double mitral murmur. Systolic thrill at the apex. Heart sounds are very irregular and rapid—about 130. Pulse 120, irregular in rate and force. Blood pressure 112/80. Edema of lungs. Abdomen distended. Slight edema of the feet.

Course: She was digitalized and put on quinidine. She was kept in bed and after five days of quinidine, the fibrillation ceased, however, a maintenance dose of digitalis was continued. A normal rhythm was maintained from March 29 to April 4, when an electrocardiogram showed the recurrence of fibrillation. On April 11, digitalis was stopped and the only medication given was iron. She appeared comfortable and seemed much improved though fibrillating. On May 11 the fibrillation disappeared spontaneously and two days later she sat up out of bed for the first time whereupon the fibrillation returned. On this day she was given $1\frac{1}{2}$ drachms of digitalis and 1 drachm on the following day (14th). The next day (15th) the fibrillation ceased. She left the hospital on May 23, 1927, against my advice, with a normal rhythm. She has not been seen nor heard of since.

Case 7. Miss L. McG., school principal, aged 42 years, seen June 12, 1915. Mitral stenosis, malaria, auricular fibrillation.

Cardiac history: Since childhood she has always been short of breath on exertion and was subject to syncopal attacks. She had scarlet fever at fifteen and pneumonia at twenty-two. During the past two years she has had attacks of palpitation coming on after exertion. (She does not think that the heart action is irregular. These attacks at times are associated with pain under the left breast and down the left arm. The pain is not very severe and disappears upon resting. The patient came for treatment on account of an attack of tertian malaria.

Physical examination: Rather poorly nourished, sallow. Thyroid contains a small adenoma in the region of the isthmus. Heart slightly enlarged on percussion with classical signs of mitral stenosis. Pulse regular. Blood pressure 120/70.

Course: From 1915 to 1923 she was seen about once a year. During this period the rhythm was

clinically normal. During the winter of 1923 she complained of an attack of palpitation lasting about an hour. She thought the heart rate was irregular as well as rapid. The attacks would cease suddenly with the sensation of a "large wave rushing into the heart causing it to swell; then the sensation of swelling would subside and the attack pass off." I was not fortunate enough to see her in one of these attacks. She was seen on May 19, 1924. At that time she complained of palpitation, almost continuous, for the past six days. The diagnosis of fibrillation could be easily made clinically and was corroborated electrocardiographically the following day. She has fibrillated continuously since this time but is in fair health and runs a large school.

Case 8. J. W. M., male, farmer, aged 60 years, seen March 12, 1928. Auricular fibrillation, M. R., mitral stenosis, myocarditis, moderate decompensation.

Cardiac history: He has been getting dyspneic after exertion for 1½ years. At first he had attacks of palpitation only after exertion and lasting only a short time. The attacks have become more numerous and longer as time went on. The palpitation is associated with rapid and irregular heart action and often accompanied by a sense of oppression in his chest and coughing. During the past six weeks his heart has been continuously rapid and irregular with attacks of breathlessness at night.

Physical examination: Well nourished, no edema but slightly dyspneic. Pulse 86, irregular in rate and force. Heart rate 96. Heart sounds are irregular and there are occasional ectopics. At the apex the first sound is roughened and there is a systolic murmur present. The second sound is snapping in character. The heart is considerably enlarged. Lungs clear. Liver moderately enlarged.

Course: He was digitalized on March 22, 1928. Quinidine was begun and he took a total of 103 grains in six days. On the sixth day an electrocardiogram showed an auricular flutter but as the patient insisted on going home, the treatment was stopped. It is not unlikely that the normal rhythm would have returned after a few more days of treatment. His physician at home informed me in January, 1929, that he was still fibrillating.

SUMMARY

In summarizing the eight cases, it will be noted that the first four cases showed practically no enlargement of the heart but were of the age in which myocardial and arterial degenerations occur. They presented no evidence of endocardial or valvular les-

ions nor gave any history of infections conducive to heart disease such as rheumatism, syphilis, etc. Two of these patients have become permanent fibrillators while the other two have normal sinus rhythm. The last four cases showed well marked cardiac changes—all had enlarged hearts—two having mitral stenosis of long standing. Three of these four patients have in time become permanent fibrillators. The fourth has been lost sight of but had a normal rhythm upon discharge. It is more than probable that she has become a permanent fibrillator by this time. In the group as a whole, there were two cases in whom it was not possible to confirm the diagnosis by an electrocardiographic curve although clinically their attacks were classical pictures of auricular fibrillation.

TREATMENT

There was considerable difficulty in evaluating the beneficial effects of drugs in many of the cases. This is particularly true when we recognize the fact that the majority of such attacks are generally self-limited, at least, in the beginning.

The drugs employed were digitalis, quinidine, pheno-barbital and bromides. Rest and reassurance also played a large part. The patients with endocarditis and evidence of some decompensation were all digitalized before trying other measures. Quinidine in case 6 apparently abolished the fibrillation after digitalis had failed—later, after all medication had been stopped, the fibrillation returned but upon administering digitalis again, it ceased. Case 5 was given both digitalis and quinidine without effect, but a few days later when all medication had been stopped except pheno-barbital, the fibrillation ceased spontaneously. Case 3 responded on several occasions to quinidine therapy but the normal rhythm could not be maintained even when the drug was continued. It should be remembered that foci of infection, alcohol, nicotine, overeating and toxic factors may all tend to keep up an irritation of the myocardium and endocardium. Such factors, of course,

should be eliminated. Furthermore, the dread of permanent fibrillation appears to be out of proportion to the harm that it produces—while, the cardiac function is to some extent embarrassed by the abnormal rhythm, if the ventricular musculature is fairly sound, these patients get along in fair comfort—provided they will live on a lower level of physical activity. It is remarkable how rapidly patients adjust themselves to this arrhythmia—physically and mentally. In most instances when it becomes permanent, they are not even conscious of the irregularity where before they were constantly in dread of attacks and often very uncomfortable during the attack. Four out of five of the known permanent fibrillators in this series are taking care of their own affairs. They fortunately have a relatively coarse fibrillation with moderate ventricular rate. One of them, case 3, has to take digitalis almost constantly.

CONCLUSIONS

1. Transient or paroxysmal auricular fibrillation is more frequent than generally supposed.

2. If the attacks become more frequent and of longer duration, the fibrillation usually becomes permanent, in spite of all medication.

3. The condition may be suspected by more carefully inquiring into the history of attacks of so-called "palpitation." It is especially important to have the patient note whether the heart action is irregular as well as rapid during the attacks. When this is the case, every effort should be made to see the patient in an attack.

4. In order to clinch the diagnosis, an electrocardiogram will, at times, be essential to differentiate paroxysmal auricular fibrillation from other paroxysmal accelerations of the heart.

5. The early recognition of this condition with the elimination of foci of infection, toxic factors, etc., may, in some in-

stances, prevent the development of permanent fibrillation.

6. Medical treatment still leaves much to be desired but digitalis, quinidine and pheno-barbital have proven their value in this condition.

DISCUSSION.

Dr. J. Leon Lewis (New Orleans, La.): Gentlemen: I agree with Dr. Lyons that paroxysmal auricular fibrillation is much more frequent than is generally believed, and it is well that he has called attention to the fact that many so-called attacks of palpitation are really attacks of transient auricular fibrillation.

I have the resume of three cases among many I have seen in the last few years which I think perhaps you may find interesting.

In November 1928, I was consulted by Mrs. M., aged 50 years, height five feet, six inches; weight 200 pounds. She complained of vertigo. Physical examination showed obesity, hypertension, blood pressure 190/100, pulse 68. The urine was negative except it showed a large amount of indican. The PST. was normal. The metabolic rate was 12. The hemoglobin was 90 per cent.

The vertigo promptly disappeared with the disappearance of the indican from the urine. She was given a reduction diet, salt reduced to a minimum, and small doses of thyroid were ordered. The result was that she lost 15 pounds and the blood pressure dropped from 190/100 to 160/90.

She was first seen in November. In January she called at my office complaining of palpitation of the heart. Examination showed a typical attack of auricular fibrillation. The heart rate was about 160 and it was extremely irregular. There was a pulse deficit of between 30 and 40. I advised her to go to the hospital for treatment, but she refused. She said she had had several such attacks previously but they had all passed off within a few hours, so I ordered her to bed, quinidine in capsules, three grains three times daily the first day, and to be increased as directed.

She misunderstood my directions and the first day she took three grains the first dose; three hours later, six grains; three hours later, nine grains; the next morning, twelve grains, and the next dose, fifteen grains. In other words, she got forty-five grains within less than twenty-four hours. I was called at two o'clock in the afternoon when they reported she was dying. When I saw her she was very much excited. She claimed her heart had been throbbing as though it would jump out of her chest. She had ringing in the ears and headache from the large doses

of quindine but her pulse was about 72 and perfectly regular and has remained regular ever since. I suspected the possibility of thyroid being the cause of this attack, so I left it off for a week, when she began taking the same doses again. That was about two months ago and she has had no further attacks.

In, April, 1922, I was consulted by a business man, a resident of New Orleans, aged 54 years, somewhat obese. He came to my office to have his heart examined. He complained of fluttering in the chest and said he had had several such attacks within the previous few months. He had no shortness of breath, no pain, no cough, no edema. The physical examination was negative, except that he had a very rapid heart, perfectly regular, and a diagnosis was made of paroxysmal tachycardia. The examination did show, in addition to this, that he had carious teeth. I prescribed a sedative and advised that he have his carious teeth extracted.

During the next few months he had several similar attacks. His pulse and heart were perfectly regular and there was no pulse deficit. Several months after this I was called to him one morning while at breakfast, and I reached his house about 9 a. m. He told me he had another attack which began the previous night about 11 o'clock, but instead of finding his pulse on this visit perfectly regular, it was still more rapid, varying between 180 and 200, and very irregular. There was a very marked pulse deficit. He was complaining of shortness of breath which he hadn't had before, and he also had some cough. The following day his pulse was even weaker, there was even more marked pulse deficit, his lungs were engorged, there were rales over both lungs and dullness over one base. He also showed a slight elevation in temperature.

At the beginning of the attack I ordered tincture of digitalis in dram doses, to be given three times daily. On the morning of the third day, about fifty hours from the beginning of the attack, his pulse slowed down within the course of a few hours from 180 to 76. Two days later, he felt perfectly normal.

After this attack he consented to have his carious teeth extracted. This was seven years ago and he has had no attacks of fibrillation since and only one attack of paroxysmal tachycardia which lasted a few hours. Examination recently showed his heart moderately enlarged, a faint systolic blow over apex, blood pressure 130-80, pulse regular and 70 to 76 per minute. He has above the average endurance of a man of his age and no shortness of breath, cough or pre-cardial pain.

Dr. I. I. Lemann (New Orleans): I have just a brief remark to make, and that is that there are

cases of paroxysmal auricular tachycardia which simulate auricular fibrillation in that, in addition to their tachycardia, they have numerous ectopic beats, so that the heart may be, instead of regular as in ordinary cases of paroxysmal tachycardia, irregular and simulating exactly the fibrillation.

Differential diagnosis, under these circumstances, is only possible with an electrocardiogram, therefore.

Dr. G. R. Herrmann (New Orleans): I just have one other word to add to what Dr. Lemann mentioned. This also is in the way of propaganda for graphic methods.

I have records of cases with short paroxysms of two or three or more beats, then normal for one or two or more, and then another paroxysm which, from the history and physical examination, simulated very closely cases such as those Dr. Lyons has described.

Another type of case is with regular rhythm which suggests paroxysmal flutter but which is a paroxysm of sinus tachycardia. I haven't seen very many such cases recorded in the literature, but I have observed a couple of cases that gave typical histories of regular paroxysms of rapid heart action, which, when examined electrocardiographically, showed paroxysms of sinus tachycardia. I think that such must be kept in mind in the differential diagnosis on clinical findings alone, as Dr. Lyons has however suggested from the patient's history, whether regular or not.

Dr. Randolph Lyons (closing): I only have a word to say in closing. I want to thank those who discussed the paper.

The object in presenting this paper was to call attention to, and stress the importance of investigating more carefully into the history of attacks of palpitation. I know in years gone by I have frequently paid little attention to them unless the patient complained a good deal and forced me to give it attention.

During the past few years I have paid considerably more attention to the word "palpitation" than I used to. I go into what the patient means much more carefully than I used to.

I don't want Dr. Lemann or Dr. Herrmann to misunderstand me. We can't always tell clinically the difference between auricular fibrillation and paroxysmal tachycardia with a large number of ectopics, without graphic curves. Frequently, when you listen to such a heart, you can get an idea of the ectopic by its prematurity. Other tests, such as exercise, may help to abolish the ectopics where they have no effect on fibrillation. If anything, they make the fibrillation worse.

APLASTIC ANEMIA.*

T. E. STRAIN, M. D.,

SHREVEPORT, LA.

Aplastic anemia is a condition characterized by aplasia of the bone marrow; resulting in a progressive, rapid, and constant decrease of the number of red blood corpuscles, which retain their physical characteristics, and by an equally progressive decrease of blood platelets, and neutrophils giving a relative mononucleosis and leukopenia.

The etiologic factors that have been assigned to this condition are as follows:

1. Benzene poisoning.
2. Chronic infections, such as malaria and syphilis.
3. Dietary deficiencies.
4. Tumors of the bone marrow.

The differential diagnosis is confined principally to differentiation between pernicious and aplastic anemia, which is as follows:

In pernicious anemia the skin is a lemon yellow tinge. The sclera has a subicteric tinge. The tongue is slick glazed, and the spleen and liver are often palpable. The long bones are frequently tender. The red blood cells are irregular in size and shape, considerably larger than normal. Urobilin is present and the color index is above 1. The bone marrow is hyperplastic and red. In aplastic anemia the pallor of the skin and sclera and visible mucous membranes including the tongue are outstanding features. The liver and spleen and long bones show nothing. The red blood cells have normal physical characteristics and the color index, if not normal, is below normal. The bone marrow is a yellow inactive aplastic tissue.

CASE REPORT.

Mr. B., a white male, aged 36 years, barber by trade, was first seen on January 10, 1929, with a complaint of stomach trouble. Family history irrelevant. Personal history: Usual diseases of childhood. Has always enjoyed good health until recently. Gonorrhea twelve years ago. Tonsils removed by electro-coagulation last July. Influenza two weeks ago. States that he began losing weight and color after having tonsils removed.

Present illness: Two months ago had a rigor followed by a high temperature of thirty-six hours duration, then began with nausea and vomiting accompanied by a low grade temperature which continued for about four weeks without any particular pain, and since that time has been bothered with gas formation with some soreness in epigastric and hypochondriac regions. The pain is partially relieved by the intake of food. Stools have been light in color and patient has lost twenty-five pounds in weight during the past six months.

Physical examination: Asthenic type of build, skin grayish pallor, no adenopathy, blood pressure S. 120, D. 75. Very good teeth and gums, pharynx healthy, tonsils absent, tongue flabby with a grayish furrowed coat, no thyroid enlargement. Chest: Normal and equal respiratory excursion and no abnormal signs on palpation, percussion, nor auscultation. Heart: Normal in size, location, and rhythm, no murmurs detected. Abdomen: Normal in appearance. Spleen: Not palpable. Liver: Slightly enlarged. Tenderness over epigastric and right iliac regions. No hernia, no hemorrhoids. Prostate normal.

Neurological examination: Epicritic, protopathic and deep sensibility intact. Superficial reflexes present. Deep reflexes exaggerated generally, sensibility of bones and joints normal.

Fluoroscopic observation showed the gastro-intestinal tract negative for any morphological defects. Two or three large gall stones were present. The appendix was dilated with fecaliths. The small intestine showed evidence of post peritoneal inflammation with numerous band formations.

Laboratory examinations showed the following: R. B. C., 1,520,000; W. B. C., 2,500; hemoglobin 40 per cent, neutrophils 12 per cent, small lymphocytes 81 per cent, large lymphocytes 7 per cent. Blood Wassermann negative. Red cells normal in appearance, with slight basophilic degeneration. Reticularcytes, 1.15 per cent. Blood platelets, 346,000; coagulation time, 4½ min., bleeding time, 2¼ min. Gastric analysis: Quantity, 4 c.c.;

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2. Repeated transfusions of whole blood did not alter the downward clinical course of the disease, except a temporary increase of the red blood cells.

3. The presence of gall-bladder disease in this case brings up the question: whether some infection or toxic substance from the gall-bladder or liver may have acted directly by inhibiting the hemopoietic function of the bone marrow.

4. Surgery was postponed in view of the fact that the patient was not physically fit.

5. Ultra violet ray treatments did not check the progressive downward course of the disease.

DISCUSSION.

Dr. O. W. Bethea (New Orleans): I think it is such careful, thorough and painstaking keeping of records that makes statistics of any value, and I believe we all appreciate the thoroughness with which Dr. Strain has followed up and reported on this particular case.

He was kind enough to send me a copy of this paper quite some days ago, and in looking up the literature (of course I had to look it up) I was very much impressed with a little story I had heard of two colored boys in the Carolinas. They were guiding a raft down the Pee Dee River when a storm arose washing all their food overboard and they were faced with semi-starvation. They decided to while away the tedium of the hours by saying over all the good things to eat they could think of. One said, "Watermelon, chicken, 'possum and 'taters." The other knocked him overboard and gave as an excuse that he hadn't left anything for him to say. That is somewhat the way I felt after reading Dr. Strain's paper.

I was very much interested in looking up the literature to see that his suggestions of the so-called aplastic anemia conform very well with current opinion. Up until within the last year or two such men as Kahn, Mahon and Johns claimed that the condition is but one phase of pernicious anemia, that particular phase in which there is an exhaustion of the blood forming elements of the body. On the other hand, men like Lyman, Green, Stevens and many others recognize all the way back a separate, independent condition. I think that is the present tendency.

It is exceedingly interesting to wonder what is going to be the result of the new plan of treat-

ment. If it has any benefit it is the first ray of hope that has permeated the darkness that has so far surrounded the prognosis in this particular type of anemia.

In the past, every case reported has gone to autopsy, and it will be extremely interesting, if this patient follows that course, to see if the hypoplasia and the aplasia of the bone marrow persists after the liver treatment to the same extent as it did before the days of glandular therapy.

It is very interesting to remember that one of the most quoted articles in literature is by our own Dr. Musser of this Association who, in 1914, reported one case and summarized the literature that existed up to that time which consisted of 59 cases.

Dr. J. E. Knighton (Shreveport): It has been my privilege to have seen and been in touch with this case that Dr. Strain has reported, he being a patient in the Tri-State Hospital of Shreveport at present.

I can say that Dr. Strain has given a faithful report of the progress and clinical picture of this case. To me it is one of the most interesting conditions. The whole subject of anemia is an interesting one, and when you see a case of pernicious anemia, for instance, and look at the blood picture, and then, on the other hand, look at a case of this type and notice the striking difference between the blood pictures, it is indeed interesting.

In many respects, of course, there is a similarity between this type of anemia and pernicious anemia, but there are other distinguishing features which, to my mind, absolutely place them in a different class. For instance, in this case his gastric analysis shows an absence of hydrochloric acid. That, you almost invariably find in pernicious anemia. On the other hand, I think every case of pernicious anemia I have ever seen, in which there was no question as to the diagnosis, showed that glazed slick appearance of the tongue. This patient had a rather definite furred coating of the tongue. None of the cases show the slick of the tongue that the pernicious anemia cases have; and the blood picture itself is so strikingly different. In the disease the red cells are all perfectly normal in appearance with no appreciable variation in size, whereas in pernicious anemia, as is well known, there is a great variation in size, shape, character and appearance.

Then in the aplastic anemia we see aplasia of the bone marrow with decrease of the red cells, the neutrophil count was about 16 on one occasion. You notice from Dr. Strain's report that the

neutrophil count was about 16 on one occasion, and on another occasion it was as low as 5 or 6 per cent.

The hemoglobin observation is different from that in pernicious anemia. In pernicious anemia you have a high color index while the hemoglobin in aplastic anemia is reduced in keeping with the reduction of the red cells.

The blood platelets, as you will probably recall, were just about normal on the first examination. With repeated examinations they have gradually gone down with the exception of perhaps after one or two of the transfusions, but the tendency has been the gradual reduction of the blood platelets.

In looking over the literature, I have noticed that the blood platelet count is the last to be affected by this condition. A normal platelet count is maintained later in the disease than the red cell count or the neutrophils.

Dr. L. F. Lorio (Baton Rouge): In regard to aplastic anemia, I should just like to relate one case that I was in attendance upon in the service of Dr. Buchman and Dr. Minard, and this was a little girl about five years of age whose blood picture was very typical of that which Dr. Strain has carefully outlined. Of course, the only treatment Dr. Minard could suggest was that of blood transfusion.

When the child was admitted to the hospital the diagnosis was made in a few days and blood transfusion was begun. At the end of the twenty-ninth transfusion, given a maximum amount of blood at each time by Dr. Kempton himself, the child finally died. I can recall that Dr. Minard said he had never seen a case of aplastic anemia, either in children or in adults, that has survived.

Dr. F. M. Johns (New Orleans): I am sorry I didn't hear the paper. I should like to report that several cases of aplastic anemia that I have followed closely with liver diet have done worse with the large amounts of liver in the diet.

Dr. T. E. Strain (Closing): There is nothing of importance left to be said except that his strength has held up unusually well, regardless of the progressive anemia and intermittant high grade temperature.

I wish to extend my appreciation to Dr. Bethea and others for discussing this paper, and also to acknowledge the courtesy of Dr. Knighton in assisting me in following up this case

THE WHYS AND WHEREFORES OF NON-SURGICAL BILIARY DRAINAGE.*

SIDNEY K. SIMON, M. D.,

NEW ORLEANS.

A question often asked is whether non-surgical biliary drainage as a clinical measure has justified itself or not. Since the introduction of the method twelve years ago by B. B. Vincent Lyons, arguments have been advanced from diversified sources, both in favor of and against the plan. The writings on the subject have likewise included a wide range of experimental investigations, and opinions, but time will not permit of a detailed arraignment of the many points at issue, either from the laboratory or from the clinical point of view. I shall confine my remarks, therefore, at the present time, merely to a review of my own impressions gained from a personal experience with the method covering a period of approximately eight years.

The original contention made by Lyons was that when a 25 to 30 per cent watery solution of magnesium sulphate was instilled into the duodenum, certain definite, physiological reactions were set up; namely, a relaxation of the oddi muscle or sphincter of the common bile duct and coincidentally a contraction of the muscular tissue of the gall bladder. The resulting effect of these processes was an emptying of the contents of the biliary ducts and of the gall bladder. This theory of cross nerve action produced by magnesium sulphate upon unstriated muscular tissue followed the line of the so-called law of contrary innervation, which had been previously expounded by Melzer. Lyons had observed by bedside experience that the introduction of magnesium sulphate into the duodenum did actually produce a free flow of bile through the duodenal tube. The fragments of bile secretion thus obtained flowed in sequence, first

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as a light brown fluid, supposedly the contents of the larger ducts, followed by a dark brown or blackish material, constituting a predicated emptying of the reserved gall-bladder contents, and finally, a pale, canary-yellow bile, which Lyons believed represented a drain of the smaller biliary radicles.

As previously stated, the announcement of these various theoretical postulates of Lyons, as likewise the principles underlying the method as a whole, were promptly contested from many sides. The main discussion seemed to devolve upon the origin of the second or black colored fragment, the so-called B bile. It was held that since the gall-bladder itself had no proven contractile muscular power, the B bile could not possibly be derived from this source, and that, therefore, the basic theory upon which the method was founded became invalid. The point was also made that various other substances besides magnesium sulphate, were likewise capable of inducing a free flow of bile into the duodenum. The introduction of solutions of varied mineral salts will, in fact, induce the flow of bile, and this is likewise true of certain food substances, such as egg yolk, peptone, liquid oils and fats. These contentions have each in turn been acknowledged as true by all observers, but the fact remains, none the less, that magnesium sulphate does possess a specific harmonic effect in this respect probably superior in both extent and degree to other substances. In reference to the origin of the B bile, it is still a matter of debate whether this more viscid, tarry material is derived from the gall-bladder itself or whether it does not constitute some type of chemical change in the bile brought about by the passage of magnesium sulphate or other saline in its passage through the liver. Frankly, I have always labored in doubt myself in respect to the ability of the gall-bladder wall to expel its contents by muscular contraction. It was Melzer's original belief that the complete relaxation of the structure of the biliary system as a

whole produced by the instillation of magnesium sulphate and other substances was sufficient in itself to cause an emptying of the biliary contents, including that of the gall-bladder.

What then, let us ask ourselves, might be the true purpose of the Lyons method? The diagnostic side, as elaborated upon quite extensively by Lyons and his school, has not proved of convincing value. The chemical, cytological, and bacterial studies of the expressed bile fragments are associated with too many variable factors to lend conclusive evidence of pathology in the biliary system. The microscopic examination of the centrifuged specimens of the fragments, however, sometimes yields certain points of information. The points to be especially mentioned in this connection are the discovery at times of excessive numbers of pus cells, and other cellular debris, suggestive crystalline deposits, and the presence of intestinal organisms, such as *Lambia Intestinalis*, *Strongyloides* and hookworm.

However, it is from the therapeutic viewpoint that the method must largely rest for its clinical justification. The *modus operandi* of the action of magnesium sulphate upon the diseased biliary tract would seem to be most convincingly explained along the following lines. Upon the introduction of the warm solution of magnesium sulphate into the duodenum, absorption takes place rapidly through the portal circulation. The mineral salt produces a free excretion or exudation from the liver cells into the biliary radicles, thus providing a flushing of the entire biliary system. This action is subsidiary to that along the course of the larger ducts and gall-bladder, as previously mentioned. In this manner there is obtained an outward flushing and drainage of the biliary tract, thereby removing retained debris and other infectious material. The fundamental method in vogue in the treatment of all infectious conditions is drainage and flushing of the affected parts from above

downward. In this instance, the duodenal tube likewise furnishes a means for the escape of the infectious bile from the body. Were this material allowed to remain in the small bowel, it might be reabsorbed and find its way again through the portal vessels back into the liver.

THE TECHNIC.

A good part of the success or failure which attends the employment of non-surgical biliary drainage depends upon the manner with which it is carried out. The method is all too frequently condemned solely because of frank failure on the part of the operator. There are certain technical rules to be followed which, while simple in themselves, require exactitude and application to details along with just a bit of practical experience. It is scarcely possible for the busy doctor himself to devote the full time needed to the performance of these details, nor is it necessary. A trained nurse or technician can be taught the fundamental principles without difficulty, and should thereafter require merely supervision and control. The average time required for the entire process, including the introduction of the tube, its entry into the duodenum, followed by the drainage of the biliary secretion is approximately two hours; obviously, too long a period for the busy medical man to devote exclusively, day in and day out, to this one particular clinical detail.

The technic that I have found in my personal experience to best facilitate and carry into execution the manifold steps involving the procedure are as follows:

The patient is to report with fasting stomach at approximately 8 to 8:30 A. M. The tube is introduced either through the mouth or nostrils (the latter is preferable) to a distance of about 25 inches from the teeth edge. The gastric content, consisting mostly of swallowed mucus, is evacuated and then the stomach is lavaged with a warm alkaline solution. While in a sitting position, he is now instructed to insert

the tube further into the stomach to a length of approximately 30-33 inches, drinking liberally of tap water during the process. It is quite important at this stage that the tube be swallowed very slowly, not faster than one inch every five minutes. After this, the patient is placed on his right side with the end of the tube unclamped, permitting the unrestricted outward flow of the accumulated secretions. Tests are then made from time to time to determine whether the tube tip has reached its goal, which is the second portion of the duodenum. The mere presence of bile issuing through the open end of the tube does not necessarily denote entrance into the duodenum. The duodenal secretion is as a rule transparently clear, syrupy in consistency, and ordinarily free from clumps or flakes. One of the best means at our disposal to determine whether the tube has reached its proper destination is to permit the patient to drink a half glass of water. Failure to obtain a prompt return of the water by aspiration indicates pretty definitely that the tip lies in the duodenum. Other signs of duodenal entrance are: a lack of HCL reaction in the secretion, negative pressure in the tube, and a peculiar feeling of nausea experienced by some patients. It is not necessary in the average case to roengen-ray the patient for the location of the position of the tube, though for ultra scientific purposes this method should always be used. With reasonable certainty that the tube has found its way to the duodenum, 50 ccs. of a 25 per cent solution of magnesium sulphate warmed to body temperature should be instilled into the duodenum, the tube clamped for three minutes, after which the flow of bile is allowed to proceed. In the same manner, a second instillation should be attempted at the end of this period, and a further 30 minutes drainage thereupon attained. If the fragments of bile do not flow readily after the tube has reached the confines of the duodenum it is probable that the tip is resting in the third or fourth portion,

which should then call for a one to four inch withdrawal.

A series of drains carried out in this manner should be instituted every other day for a total of from ten to twelve treatments, though, of course, the frequency and number is entirely arbitrary and is subject to adjustment to the individual needs of each case. A subsequent drain at intervals of two to four weeks may be and is not infrequently required.

INDICATIONS.

In respect to the indications and limitations of non-surgical biliary drainage, much has been and could be said, both pro and con. First of all, it should be stressed that no real conflict need exist between medical and surgical thought in this field. A good motto to follow in this particular instance, as in many others in clinical medicine, is "to render unto Caesar what is Caesar's," nothing more, and nothing less. The surgical indications in cholecystic disease are clear cut and include such lesions as, violent acute inflammations, gangrene, extensive suppurations, empyema of the gall-bladder, hydrops, tumors, benign and malignant, impacted stones and other chronic cases, which have resisted all conscientious medical handling. After subtracting this group of more or less advanced, serious cases of cholecystic disease, there still remains the milder lesions to which the gall tract falls heir, namely, the simple catarrhal processes, the low grade attenuated infections involving not infrequently the small biliary tubules as well as the larger ducts and gall-bladder. These cases constitute a rather numerous class, many of which in reality are more fully served without surgery. The requirements of thorough drainage and flushing for their type it would seem, are better met by the instrumentality of the duodenal tube and the intillation of magnesium sulphate in the manner indicated above.

DISCUSSION.

Dr. J. E. Knighton (Shreveport, La.): I only want to refer to this method of biliary drainage

as a therapeutic measure with reference to catarrhal jaundice. All of you recall the difficulty of getting the patient well with the ordinary, simple catarrhal jaundice cases. With the old measures of treatment, as a rule you had your patients on your hands three to four or six weeks. That is one condition in which the trans-duodenal biliary drainage stands out as the treatment that should be instituted.

If you use the duodenal tube with the drains, as suggested by Dr. Simon, you may not get any bile whatever with your first attempt, but in the great majority of cases the second attempt will show some bile, and by the time you have tried your third treatment, even at daily intervals, you will usually be rewarded by a fairly copious biliary drainage. Your patient begins to feel better and continues to improve, of course, with a few additional drainages, and in very short while compared with the period of time which the patient suffered with the old line treatment.

We sometimes see cases of jaundice where it is rather difficult to make a definite diagnosis as to whether you really have jaundice due to a complete obstruction of the common duct by means of a stone, malignant growths or other mechanical causes. In such instances your trans-duodenal biliary drainage is very important as a differential diagnostic measure. If you succeed, within the first few attempts, in securing specimens of bile, you know you haven't a complete obstruction of the common duct, and that a diagnosis of simple jaundice is indicated.

I just mention that for the benefit of those who may not have tried biliary drainages by the duodenal tube in cases of simple, catarrhal jaundice.

Dr. D. N. Silverman (New Orleans): About six or seven years ago one of our prominent surgical confreres said that in five years we will not hear any further word from non-surgical biliary drainage, and Dr. Simon has a continuation of this; not a revival but a continuation. We are using it daily.

I arise especially to speak on the question of gall-bladder drainage by the use of the duodenal tube. I can't help but get up and talk about that.

In 1924 Dr. Menville and I proved that the normal gall-bladder would empty more or less completely with successive stimulations of the duodenum with magnesium sulphate solution. Since that time there has been confirmation of that work by any number of workers, Lake, Comstock, Eberhard, Lyons and others. I think that is a very important fact in diagnosis and treatment. If repeated non-surgical biliary drainages are attempted, and they should be attempted in diagnosis by the physician himself, and there is

no B bile, and therefore no apparent drainage of the gall-bladder, this case does not fall within the realm of medical treatment. That is a point in diagnosis which makes the case one for surgical therapy.

The diagnostic findings which have been brought out by Dr. Simon are certainly of value, providing, as he says, the method is more or less systematized and standardized. Certainly, if we are merely to pass a duodenal tube into the stomach and put magnesium sulphate in there, and, subsequently, examine the contents, we are not going to get very much information. Therefore, an examination made of the fasting stomach contents, and an examination of the duodenal contents. After the administration of magnesium sulphate a third analysis is made of the biliary contents themselves.

Dr. A. A. Herold (Shreveport, La.): I know we all appreciate Dr. Simon's bringing this subject up again because some of our surgical brethren feel it has fallen into disuse.

I was especially glad to hear Dr. Simon draw the line between those cases which are frankly surgical and those which are amenable to this treatment because they think we claim the earth and the fullness thereof for this line of treatment.

I am reminded forcibly of a patient referred to me several months ago with a diagnosis of chronic cholecystitis, by a surgeon, and on whom I tried this drainage very successfully I thought. I expressed the opinion that I didn't believe she had enough evidence of chronic cholecystitis to warrant an operation on the gall-bladder. She continued to suffer. I recently followed the patient to the operating table where we had a chronic appendix removed with multiple adhesions around the cecum. After thorough examination of the abdominal viscera, the surgeon decided to do a hysterectomy and found no pathology from the gall-bladder, showing that you can find out by this method; in other words, help in diagnosis.

Referring to the cases which Dr. Knighton mentioned, I have seen some of these patients that had catarrhal jaundice where I have been entirely unsuccessful with one or two drainages. By persistence it finally yielded and the results were satisfactory.

Dr. E. J. Cather (Oakdale, La.): I have always been very much interested in surgical drainage of the gall-bladder. So much has been written as to whether it has done good or whether it hasn't done good that I never did know. Except in diagnostic purposes it gives you a line on the biliary tract.

I read in a journal where some doctor said if you take two ounces of glycerin and four ounces of epsom salts in a six-ounce mixture, place the patient on the right side and do just as you would in duodenal drainage, two hours, you would get the same result. It may be because I am lazy, but it seems to me I have obtained just as good results from that as when I went ahead and drained the gall-bladder. You will get some pretty good results if the first drainage is done well.

Dr. J. B. Vaughan (Monroe, La.): At this time I should like to express my own views that the duodenal tube is here to stay, and not altogether as a diagnostic instrument. Until a better treatment is found I want to add my support to that of Dr. Knighton, that it is a treatment par excellence for catarrhal jaundice.

Dr. S. K. Simon (closing): I want to thank the various gentlemen for their discussion.

It is an interesting thing, in connection with Dr. Knighton's remarks, that the first group of cases Lyons experimented with in this method were cases of catarrhal jaundice. His first paper on the subject was a complete clinical review of that subject, and demonstrated that the time of the duration of the jaundice was shortened at least two weeks by the use of the method of draining the gall-bladder by means of the tube.

The contention of the doctor that the magnesium sulphate might just as well be given by mouth is quite an old one. It cropped out very shortly after the method was announced eight years ago, and it will not down. I don't deny that to a certain extent the use of magnesium sulphate, or other salines by mouth will produce some degree of biliary drainage. I think the basis of success of the saline springs, such as Carlsbad, Saratoga and other spas that have been used from time immemorial for the treatment of gall-bladder cases are supposed to be the result of the drinking of the water alone. However, I believe it is the mineral content contained in these waters that helps in the drainage of the biliary tract when taken on an empty stomach.

Nevertheless, the introduction of a duodenal tube into the duodenum is so simple, and the results are much more definite and exact. The point that Lyons always stressed was that it took away the refuse, as it were, and did not permit it to trickle down into the small bowel to be re-absorbed. That is a point in favor of the use of the tube method rather than the oral method, so-called.

Dr. Silverman mentioned the contraction of the gall-bladder. Nobody has ever proven absolutely that the gall-bladder contracts at all. There is a very thin veil of muscular tissues in the gall-

bladder and nobody has seen it contract or has proved that it has contractile power. Be that as it may, the relaxation of the tissues of the large ducts and the slight elevation of pressure in the gall-bladder permits a duodenum without necessary contraction of the gall-bladder wall itself. The point whether the gall-bladder actually forces its contents out by muscular contraction is not a vital one.

I appreciated Dr. Vaughan's few remarks very much. This is not a method for gastro-enterologists alone. This is a method simple enough for use by any practitioner in medicine anywhere.

OCULAR TUBERCULOSIS.*

W. R. BUFFINGTON, M. D.

NEW ORLEANS.

The basis of this paper is the result of a study of a series of cases presenting ocular conditions, explicable in no other way than by supposing them tuberculosis in origin. A study of the patient, the nature of the eye lesions, the serological and other diagnostic findings, the result of treatment, have forced these conclusions. One must admit that tuberculosis of the eye has become more prevalent in the last few years; or else, observers formerly overlooked this important factor as a cause in many eye diseases. Or, is the pendulum swinging too far in this diagnostic assumption? I am inclined strongly to the first and last statements.

In New Orleans, for instance, such careful and scientific observers as Bruns and Feingold in the past have considered ocular tuberculosis rare. Certainly, the opinions of these two authorities must be given weight. On the other hand, there are capable men in this country and in Europe who classify all inflammatory ocular lesion as tuberculous when no other cause can be readily demonstrated.

In a review of the literature written during the past twenty years, one is struck by the voluminous reports of all sorts of eye conditions laid at the door of the tubercle

bacillus. A careful perusal shows most of it to be of little value because it has been based on incomplete and unreliable data. The observation and experience of such careful students as Jackson and Finoff, and, more recently, Wilmer and his school, have been of great value in giving us reliable information about the various manifestations of ocular tuberculosis. Since this is to be largely a case report, I shall not burden you by an extensive reference to the literature.

It must be admitted that tuberculosis can attack any part of the eye or its adnexa. Accumulated facts prove this beyond doubt. A lupus of the face may involve the lids and finally the conjunctiva. Authentic cases of primary tuberculosis of the lacrimal sac have been reported. Chalazia have been classified as tuberculous because histologically they show round cell infiltration, epithelioid and giant cells. They are probably not tuberculous. Experimentally, tuberculosis is not transmitted by chalazial tissue. Jackson, Lundgaard, and others, have reported primary tuberculosis of the conjunctiva. In some respects it may resemble trachoma—except, as Jackson says, the condition of the patient and the glandular enlargement distinguish it from trachoma. In tuberculous conjunctivitis the pre-auricular glands often break down (Lundsgaard). We have seen no cases of tuberculous conjunctivitis in our clinic.

Phlyctenular ophthalmia is thought by some to be tuberculous—kerato conjunctivitis. Our experience with a large number of cases convinces me that it is a nutritional disease. Bruns has given his reasons against considering it tuberculous in several papers, after a thorough study of this disease. He showed, especially, the astonishing results obtained by giving phlyctenular patients what we would now call a high vitamin diet. Tuberculosis, other diseases, or conditions of environment which affect profoundly the nutrition of a predisposed person will precipitate an attack, or repeated attacks. I believe with

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the French that it must therefore be classified as a nutritional dysfunction and not a tuberculous process.

Tuberculosis of the cornea is extremely rare. In most instances, tuberculous keratitis is an extension from disease of the anterior uveal tract. This secondary involvement of the cornea can be seen in the colored picture made of Case No. 1, of my series.

Lesions in the uveal tract are probably the most common manifestations of ocular tuberculosis. The order of frequency is choroid, ciliary body and iris. At any rate, this has been our experience. Retinal tuberculosis is rare. I have seen a case in which the fundus picture showed enormously dilated, tortuous veins with many constrictions of their calibre, slight edema of disc and retina, and a few superficial retinal hemorrhages. The eye however, was lost from a focal reaction due to the injudicious injection of tuberculin for diagnostic purposes.

The cases here reported are all primarily tuberculosis of the uveal tract. My remarks will be confined to some of the differential diagnostic high points in diseases of this part of the eye. In many diseases of the uvea, three important causes come to mind, viz.: first, lues; second, tuberculosis; third, focal infection. Lesions produced by any of the three may resemble each other so closely that a clinical differential diagnosis is impossible. From a purely clinical standpoint, the patient's history, chronicity with recurrences and exacerbations, are the most important. The clinical aspect must always be given the most careful consideration in formulating our conclusions. Fortunately, as time goes on, more accurate means are found to assist in finding the obscure causes of disease. In a study of uveal diseases, certainly the corneal microscope has been of great value, but our most valuable help is the laboratory. It is constantly refining our serological tests and giving us a better under-

standing and a more accurate interpretation of their many reactions on living tissue.

In my experience, diseases of the uveal tract due to focal infection clear up rapidly when the focus is relieved, removed, or treated. Recurrences and exacerbations are highly suggestive of systemic cause, and that focal infection only plays a minor role. The most difficult problem to my mind in many obscure chronic cases is to determine whether the condition be luetic or tubercular in origin. If our various tests were a hundred per cent perfect this difficulty would be eliminated, except in those cases where the two diseases run concurrently in the same patient. Under such conditions we are forced to resort to that time-honored, but by no means obsolete method, the reaction to the therapeutic test.

In the large percentage of uveal diseases due to lues, we are all aware of the promptness with which they improve under proper and intensive medication. It is long standing and neglected cases which give us our greatest concern.

Tubercular iritis, iridocyclitis, or exudative chorioiditis, is always chronic. It may be mild or it may be severe. Any case of chronic uveitis which does not clear up under specific treatment, or after removal of foci of infection, must be regarded as potentially tuberculous, until proved otherwise. When we consider that all of us before the age of five years have been infected with tuberculosis, is it any wonder that it plays so important a part in ocular diseases?

To determine whether one is dealing with a tuberculous infection of the eye in a given case, there must be a close co-operation between the internist and the oculist. A careful physical examination must be made. All possible sites of foci of infection must be inspected. A blood examination, and, in some instances, a spinal fluid examination ought to be made. In most

of the cases in my series this line of procedure was strictly adhered to, except in Case No. 2 and Case No. 4. In these two cases focal causes were searched for; Wassermann tests were made, all proved to be negative. The physical examinations of both patients showed mildly active pulmonary tuberculosis. It was not considered necessary, nor advisable, to make the tuberculin tests in the face of such positive evidence. The results shown in the detailed reports will justify this assumption.

We now come to the use of the tuberculin reaction in arriving at a correct diagnosis, and the results obtained when it is given as a therapeutic agent. There are some who laud its use to the skies. There are others who feel that it is a dangerous and treacherous remedy. Our limited experience teaches us that it is a valuable diagnostic agent, and that it has merit in the treatment of uveal tuberculosis. It should never be employed except under the careful supervision of a tuberculist or capable internist. From the standpoint of the oculist, I have seen but one serious result to an eye. As mentioned before, this occurred some years ago when it was employed injudiciously to assist us in the diagnosis, but the eye was lost.

In our hospital cases the tuberculin reaction for diagnosis, and its use as a therapeutic agent have been under the supervision of Dr. Durel. He will, I trust, give you his method of procedure in his discussion. His careful tests have aided us wonderfully in arriving at the correct diagnosis. Results of treatment have certainly been splendid. After the intracutaneous introduction of tuberculin for diagnostic purposes, the following procedure is observed. The patient is put to bed, if possible, the temperature taken every two hours, the local skin reaction is watched, careful observation is made daily for any evidence of focal reaction in the eye, and finally the pulmonary and other reactions in the chest, if any, carefully studied. If a marked skin reaction and an elevation

of temperature follow, the diagnosis is probably correct. In addition, if a focal reaction occurs either in the eye or in the chest, the diagnosis is considered certain. Focal reaction in the eye is usually characterized by increased deposits on the posterior surface of the cornea and an increase in the density of the vitreous opacity. In our cases this reaction has been followed by marked improvement in the eye condition. In one sluggish case, (No. 3) rapid improvement began, following the diagnostic injections. Whether the eye reacts to tuberculin as a specific antitoxin or as a non-specific protein is still undetermined.

The following cases demonstrate many phases of ocular tuberculosis:

Case 1. M. F., colored female, aged 25 years, admitted to hospital June, 1926. Complaint: Pain, inflammation in both eyes. Family History: Mother has active pulmonary tuberculosis. Past History: Patient always healthy. Developed inflammation in R. E. May, 1925. Condition grew progressively worse. Eye became completely blind. Present History: Early in 1926, L. E. became inflamed as had the right before. Vision reduced to counting fingers. Examination: Examined in August 1926. Physical examination of the chest was negative, no foci of infection present. Blood and Wassermann, negative. Later, two spinal fluid tests were negative. Cutaneous tuberculosis test strongly positive. Roentgen-ray examination of the chest showed definite evidence of pulmonary tuberculosis. Two months later, roentgen-ray showed a marked tracheo-bronchial adenopathy. Occasionally the patient ran a low temperature. R. E. V.—O; L. E. V.—hand-movements. Ophthalmoscopic Examination: August, 1926—R. E.: A painful, slightly inflamed atropic eye. L. E. (seen by me first, three months after her eye became affected): Moderate ciliary injection. Fine deposits on posterior surface of cornea. Some deep opacity in periphery of cornea. Several grey-white nodules were clearly seen in different parts of the iris. Some were larger than others; one or two were capped by a fibrinous exudate; multiple posterior synechia; fundus not visible. Diagnosis: R. E.—Iridocyclitis (tuberculous) atrophy of eye ball. L. E.—Iridocyclitis (tuberculous) atrophy of eye ball. Treatment: Previous to August, 1926, intensive antileptic. Condition grew steadily worse. Since August, 1926, treated along anti-tubercular lines. (No tuberculin). Patient's health improved. She put on weight rapidly. The condition of the eye, however, had advanced so far that complete blindness will be the end.

Case 2. W. J. L., aged 46 years, height 5 ft. 8 in.; weight, 122 pounds. Complaint: Failing vision in R. E.—First seen May 25, 1928. Family History: Negative. Past History: Has had gonorrhea. Has been overweight and felt bad a long time. Present Illness: Several months ago right eye began to blur, get red, run water. Slight pain; gets better, then worse. Examination: Adult—under-weight—*anemic*. Prostate slightly enlarged. Moderate chronic prostatitis, No foci of infection. Wassermann, negative. Roentgen-ray showed evidence of pulmonary tuberculosis. Physical examination showed mildly active pulmonary tuberculosis. Heart, negative; pulse, 96; R. E. V.—20/40, corrected. L. E. V.—20/15, corrected. Ophthalmoscopic Examination: R. E., slight ciliary injection, dull cornea; deposits on posterior surface; slightly dilated sluggish pupil; deposits on out capsule of lens. Many vitreous opacities; fundus indistinct. No lesion seen. T. N. Diagnosis: R. E., chronic ant. uveitis (tuberculous.) Treatment: Patient lives in the country. Returned to follow general treatment along tubercular lines—rest, sunshine, nourishing food. Not possible to give tuberculin. June 22, 1929, R. E., no injection; a very few fine deposits on post. surface of cornea; vitreous opacities less dense; weight 130 lbs.; felt much better. Continue treatment. Last eye examination, August 14, 1928. R. E. perfectly quiet; few remaining vitreous opacities. R. E. V. corrected, 20/20; no exacerbation of ocular symptoms since treatment begun; felt fine; weight, 135 lbs.

Case 3. G. B., aged 27 years; height, 5 feet; weight, 127 lbs.; admitted to hospital March 27, 1928. Complaint: Headache, failing vision R. E. 14 days; L. E. about 18 months. Past History: Pneumonia at aged of 12 years; operated on for rupture in 1925. No other illness of consequence. L. E. became inflamed, painful, blurred vision, saw floating spots more than a year ago. Duration of this attack, 5 months. Sometimes after this R. E. became blurred, saw spots, never inflamed. Examinations and tests made were reported as negative. Treatment: Rubs and iodids. Family History: One brother died from malarial fever. Present History: L. E. has had recurring attacks of inflammation and poor vision since first affected. R. E. began to blur and see spots two weeks ago. Unable to read at present time. Examination: Well developed male. Heart and lungs negative. Blood, Wasserman, spinal fluid tests were negative. Blood chemistry is normal. On March 29, 1928, roentgen-ray of teeth, negative. Left sphenoid blurred. April 9, 1928, left sphenoidectomy was done. No pus found. Ophthalmoscopic Examination: R. E. V. 20/70, L. E. V., C. F., 7 ft. R. E.: Many weblike vitreous opacities; fundus indistinct; above and to nasal side of disc is a large, white, slightly elevated patch

of exudate. Retinal vessels lie in front of it. T. n. L. E.: Deposits on post. surface of cornea; pupil dilates irregularly (post. *cynechia*). Fundus not seen because of dense cloud-like vit. opacities. Treatment: Intensive antiluetic treatment, Hg. rubs; K. I.; Neosalvarsan from March 27, 1928, to June 12, 1928. Discharged June 12, 1928. R. E. V. 20/50, corrected; L. E. V., f. c., 12 feet. Aug. 12, 1928, readmitted to hospital because of recurrence of eye symptoms. R. E. V., 20/100; L. E. V., L. P. Ophthalmoscopic Examination: R. E., vitreous clouds; fundus indistinct. Above and to nasal side of disc are seen two large massive exudates, each area several times larger than disc. L. E., vitreous opacities so dense that no fundus reflex is present. Suspicious of detachment of retina. (See picture of lesion in each eye—R. E. in color; L. E. in black and white.) Examination on this date of heart and lungs, negative. Roentgen-ray of chest: Marked tracheobronchial adenopathy; calcified nodes in roots of each lung. Both apices show hazy infiltration. The picture is suggestive of a tuberculous process in upper lobes of both lungs. August 29, intracutaneous injection O. T., 1 mgm. was given. No local, focal or systemic reaction. Sept. 8, 1928: The third intracutaneous injection of tuberculin, 3 mgm. Sept. 9, 1928, focal reaction in left eye. Focal response in both apices of lungs. Rales are noted (Durel). Local reaction larger than dollar. Highest temp., 99 degrees. Diagnosis: Bilateral uveitis; massive exudation in choroid and retina (tuberculous). Treatment: Rest; tuberculous diet; regular therapeutic doses of tuberculin given by Dr. Durel. (Doses ranging from .001 mgm. to 2 mgm.) Results: Rapid improvement in general health; rapid improvement of eye condition. Improvement of eye symptom noticed from the beginning of the diagnostic tuberculin tests; viz., clearing up of vitreous; fairly rapid absorption of the exudate. Condition, Jan. 28, 1929: Weight, 147 lbs. Feels fine. R. E. V., 20/20, L. E. V., 20/200. Poor vision due to central lesion in L. E.

Case 4 J. L., aged 15 years; height, 6 foot 1 inch; weight, 125 lbs. First seen July 27, 1928. Complaint: Loss of vision, R. E. Family History: Negative. History: Tall, thin, 25 lbs. underweight. Has grown up quickly. Suffered all life with severe periodic headaches, due to stomach trouble. Present Illness: About June 15, 1928, R. E. felt like there was something in it. Following day the eye was red and painful. Condition grew worse during next few days. Vision much affected. During following three weeks, pain and redness gradually subsided. Vision remained poor. Examination: Blood, urine, negative; teeth and tonsils show no foci of infection; roentgen-ray report, marked perihilar and peribronchial infiltration on left side. Left-

sided diaphragmatic adhesion. Physical, active tuberculosis, both lungs. Afternoon temp., 99° to 100°; pulse, 96. R. E. V. fingers, one foot; L. E. V., 20/30. Ophthalmoscopic Examination: R. E., slight ciliary injection. Few fine deposits on post. surface of cornea and ant. capsule of lens. Pupil dilated 3½ mm. Dense clouds of vitreous opacities; fundus barely seen but a large area can be seen extending from nasal side of disc to be lost in the extreme periphery. Fundus visibility too poor for a study. L. E., many fine vitreous opacities moving slowly; disc apparently normal; the veins show peculiar changes. The lower nasal vein becomes dilated some distance from the disc. It becomes banked and rapidly reduced in size at first arterial crossing. Other veins show abnormal dilatations and constrictions along their courses. Upper nasal vein blurred in one location; more peripherally in its course, there is astride the vein a white solid looking elevation (tubercle) one-half dd. in length. Diagnosis: R. E., ocular tuberculosis (uveal and retinal); L. E., retinitis (tuberculous). Treatment: Patient lives a long distance from here. Tuberculin treatment not practical. Patient was sent home, put to bed, given diet, fresh air and sunshine. General health improved rapidly. Rapid improvement in vision right eye, October 6, 1928, weight was 150 lb. Ocular Examination: October 6, 1928: R. E. V. 20/40, L. E. V. 20/15. Vitreous opacities reduced; fundus seen fairly well. The large white area shows to be a massive retinal exudate (see colored painting). L. E., no vitreous opacities. Veins, normal calibre. The peripheral tubercle had entirely disappeared. Final Diagnosis: R. E. Uveitis (tuberculous), (b) retinitis, with massive exudate (tuberculosis). L. E., retinitis (tuberculous). Last seen on March 30, 1929, with following findings: R. E. V. 20/40, L. E. V. 20/15. R. E., massive retinal exudate has been partially absorbed and organized into a connective tissue band. L. E., normal.

Case 5. White female; age 25 years; weight 155 lb. First seen April 16, 1928. Complaint: Failing sight in R. E. Family History: Negative. Past History: Has had measles and typhoid fever. Patient has had two normal healthy children; has had two premature labors at seven and eight months. Negative tubercular and leucic history. Examination: Well developed and nourished female. Chronic tonsilitis. Heart and lungs found to be negative. Urine, blood and Wassermann tests, negative. Roentgen ray shows two apical abscesses of teeth; teeth extracted. Ophthalmoscopic Examination: R. E., moderate ciliary injection; dull cornea. Many deposits on posterior surface of cornea; many large and small vitreous opacities; two large areas of choroiditis were seen in the upper nasal quadrant, several

dd. from disc. L. E., found to be normal. R. E. V. 20/200, L. E. V. 20/20. Treatment: Patient was put on intensive HG. rubs. K. I. locally, atropin and dionin. June 8, 1928, no injection, no deposits on post. surface of cornea; vitreous opacities less dense. Vision had improved. While under treatment patient had an abortion, June 24, 1928. Patient stopped visiting clinic on this account, but states that treatment (antiluetic) was kept up. Additional Notes: On September 21, 1928, patient returned: R. E., ciliary injection, many deposits on post surface of cornea; increase in the density of vitreous opacities. R. E. V., 20/200, L. E. V. 20/20. Oct. 12, 1928, gynecological report: No infection in pelvis; at this time a marked exacerbation of her eye symptoms. Admitted to hospital Oct. 12, 1928. Usual laboratory examination again negative. Spinal fluid examination, negative; at this time roentgen-ray report A. P. view: Exaggerated hilar shadows; a hazy peribronchial infiltration in the upper hilar zone. Picture suggestive of an early tuberculosis involving upper right lobe. Oct. 19, 1928: Intracutaneous tuberculin test with 3 mgm. O. T., sub-cutaneously. After 3 days no focal, local, nor systemic reaction. Oct. 26, 1928, a second intracutaneous test with 10 mgm. O. T., subcutaneously, was made; this was followed by a local, but with no focal nor systemic reaction. Oct. 29, 1928, R. E., less injection; few corneal deposits; media clearer. Oct. 30, 1928, 10 mgm. O. T. (Durel) roentgen-ray report states there is a clearing up of the perihilar infiltration. Tuberculin caused no focal reaction. Local reaction, positive. Elevated temperature, two days. Nov. 1, Nov. 3, and Nov. 6, 10 mgm. O. T. were given. Roentgen-ray report: Slightly increased density in the apices. Physical findings, increased resilience in the interspaces and wheezes in the left lower bronchus.

Diagnosis: Hilar tuberculosis, non-active (Durel). One week later, tuberculin injection 10 mgm. O. T. Focal reaction in eye followed; viz., ciliary injection; dull cornea; enormous increase of deposit on the post. surface of the cornea; increased density of vitreous opacity; fundus not seen. Tn., R. E. V., c. f., 6 ft., L. E. V., 20/20. Focal reaction lasted two weeks. Local treatment at this time, atropin, massage, and hot applications. Dec. 7, 1928, eye symptoms improved; patient has flu; no tuberculin. Dec. 12, 18, 24; 10 mgm. given each day. Following each injection, less focal reaction was noted in R. E. R. E. V., 20/200, L. E. V. 20/20. The following doses of B. E. administered: Jan. 8, 1929 1½ mgm.; Jan. 22, 1929, 2 mgm.; Feb. 1, 1929, 4 mgm.; Mar. 6, 1929, 5 mgm. Patient still under treatment. Results to Date: Immediate, intense, focal reaction in eye, followed by less intense reactions. These exacerbations have ceased altogether, although the dos-

age of tuberculin has been increased. The improvement in all symptoms is now rapid, undoubtedly due to tuberculin therapy. The seriousness of this case, the exacerbations, in spite of active antiluetic treatment, justify the suspicion that this is a uveitis due either to focal infection or tuberculosis. The intense focal reaction and improvement following the use of tuberculin, make the diagnosis of tuberculous uveitis certain. April 1, 1929, R. E. V. 20/100, L. E. V. 20/20.

Case 6. A. G., aged 13 years; height, 4 feet 6 inches; weight, 55 pounds. First seen August 13, 1928. Complaint: Loss of vision R. E. Supra-orbital headaches. Duration, three or four weeks. Family History: Negative. Past History: No serious illness. Appendectomy two years ago. Examination: Well-developed female, undernourished. Urine, blood, Wassermann, sputum, negative. Blood count, nothing unusual. Roentgen-ray of chest: A. P. Hilar shadows exaggerated, especially on right side. Upper right lobe shows hazy infiltration; lower and outer border suggestive of tubercular process. Thickening inter-lober pleura. Chest, slight exaggerated breath, right apex. Intradermal tuberculin test, Sept. 8, 1928, with 3 mgm. O. T., sub-cutaneously. No local or focal reaction during 48 hours. Temperature, 99.2; pulse, 110. Sept. 11, 1928, intradermal test, with 10 mgm. O. T., sub-cutaneously. Marked local and systemic reaction; anorexia. Pulse rose from 88 to 112. Focal hilum reaction. Sept. 29, 1928, referred to Dr. Durel. He reports no active tuberculosis. Peribronchial tuberculous adenitis. R. E. V., L. P.; L. E. V., 20/70. Ophthalmoscopic Examination: R. E., slight ciliary injection; dull cornea. Many posterior corneal deposits, pupil dilates irregularly (multiple posterior synechia). Dense cloud-like vitreous opacities; fundus not seen. L. E., cornea dull; pupil dilates fully; large brown vitreous opacities; a large 3 dd., irregular white massive chorioidal exudate seen up and in from disc; T. N. Diagnosis: R. E. and L. E., uveitis (tuberculous), with massive chorioidal exudates. Treatment: Given regular tuberculous diet, plenty of rest and fresh air. Under supervision of Dr. Durel, tuberculin treatment began October 15, 1928, and is being given by him to present time. Doses and interval of doses guided by neutrophilia index. In this case, at no time could there be seen a focal reaction in either eye. Steady and constant improvement of vision to present time. Last dose of O. T., 10 mgm., was given March 29, 1929. Results to date: R. E. V. 20/200, L. E. V. 20/20. Slow and steady absorption of vitreous opacities. Poor vision of right eye due to an apparent irregular organized vitreous exudate in front of macula. Massive chorioidal exudate in L. E. has

been absorbed, leaving a sharply defined area of chorio-retinal atrophy. Patient weighs 71 pounds.

Case 7. L. R., white male, aged 31 years; height 6 feet, weight, 135 pounds; admitted, to Charity Hospital, January 25, 1929. Complaint: Failing vision, R. E. Family History: Negative. Three normal children. Past History: Has had measles; stomach trouble at times; cough for two years; took quinine for cough; never consulted a physician. Tonsils removed June, 1928. In May, 1928, began to have pain and failing vision of R. E. Loss of vision has been gradual. Now counts fingers at a few feet. He thinks the left eye has begun to blur. Physical examination said to be negative. No sinus infection. Prostate negative; urine and blood, negative. Suspicious teeth removed. Took K. I. four months; this had bad effect. While taking iodides, weight reduced from 143 to 135 pounds. Examination: Tall, thin; tubercular in appearance. Not acutely ill; skin warm, dry and elastic. Heart, lungs, abdomen negative. Urine, negative; Wassermann, negative; spinal fluid, negative. Roentgen-ray of chest showed exaggerated hilar shadows; inner third of lower part of lung shows hazy infiltration suggestive of hereditary lues. February 2, 1929, 2 mgm. O. T. given intracutaneously, with 1 mgm., sub-cutaneously. Local and focal reactions followed. Temperature rose to 99.6 during the night. Feb. 16, 1929, another intracutaneous injection O. T. was given. This showed positive. No focal reaction in eye. February 21, 1929; 10 mgm. O. T., given sub-cutaneously, was followed by temperature, 99; on second day a focal reaction was noted in hilum of lungs (Durel). R. E. V., f. c. at 2 ft. V. E. S., 20/20. Ophthalmoscopic Examination: Right cornea faintly dull; three or four posterior corneal deposits. Both pupils equal. 2½ mm. reaction. Pupils dilated fully and round (Homat.). R. E., large, dense, cloud-like vitreous opacities; fundus seen indistinctly; a large grey-white oval massive exudate 3 dd. in size extends temporally from the macula region. L. E., few small vitreous opacities; up and out in mid zone of fundus was seen an irregular round 2 dd. circumscribed area of chorio-retinal atrophy, with slightly pigmented borders. No recent lesion found. Diagnosis: R. E., chorioiditis (tuberculous). L. E., chorioiditis, old. Treatment: March 2, 1929, Intracutaneous tuberculin test, 1 mgm. Bacillus Emulsion, was given and followed on the second day by a large area of local induration. Altogether, five therapeutic doses of tuberculin were given; doses of B. E. increased up to 5 mgm. Patient was put on special tuberculous diet. Results: April 1, 1929, intracutaneous tuberculin test, 1 mgm. Bacillus Emulsion, was given and followed on the second day by a large area of

local induration. Altogether, five therapeutic doses of tuberculin were given, doses of B. E. increased up to 5 mgm. Patient was put on special tuberculous diet. Result: April 1, 1929, patient feels well; has gained weight; sees better. R. E. vitreous cloud much less dense. Exudate undergoing rapid absorption. Pigment proliferation beginning. R. E. V., 20/200. Relative central absolute pracentral scotoma. No focal reaction occurred in eye at any time. Improvement of vision; absorption of vitreous opacity began coincidental with the tuberculous reaction for diagnostic purposes. Patient goes home because of family sickness. He is to continue diet, rest. L. E. V., 20/20.

DISCUSSION.

Dr. W. J. Durel (New Orleans): Dr. Buffington in studying this subject called for our co-operation, and although our clinic was crowded, we were glad to give it to him. I want to call attention to the fact that no matter where tuberculosis manifests itself, it has the same old forms, the tubercular, the infiltrative and the exudative types. This holds true of all the organs of the body, and it is well to remember it when we are using tuberculin as a diagnostic agent. People of eminence have talked of the danger of using this agent for diagnosis and until recently I was almost the only man in the South who was willing to use it; in my thirty years of work I have yet to see any detrimental results from it, and Dr. Buffington will bear me out in his special field. Now the pendulum is swinging the other way. In the last July issue of the *American Review of Tuberculosis* Dr. Allen Krause says that the use of tuberculin is the only procedure which can settle a diagnosis of tuberculosis. I employ the inter-cutaneous skin method first, then the sub-cutaneous, and these methods show first, whether the patient has tuberculosis at all, and second, where it is located. If the patient hasn't the disease, he is not going to react to any test; if he has the minutest focus, active or inactive, he is going to react; if he has an active case, he is going to have a focal reaction also. Except by section of autopsy I know of no other method which gives you that information. It is well to remember that in obscure eye diseases the internist can give you oculists much valuable help, and it is well to remember also that the eye is as susceptible to tubercular infection as any other organ of the body.

Dr. M. Earle Brown (New Orleans): The presentation just offered is a contribution upon the subject of ocular tuberculosis. Retinal tuberculosis, per se, is exceedingly rare, there being less than fifty cases reported. These cases represent the reward of diligent search and careful study.

Retinal tuberculosis, a classic by Jackson of Denver, seems to have escaped the majority of observers. The Germans, however, have been finding tuberculosis in a great many of the eyes examined in their clinics. They have been especially fond of the use of old tuberculin, itself a product of theirs (Koch). It has found its place in text books and there remains while the majority of the medical profession has discarded its use many years ago.

Old tuberculin, as a test is used for two purposes; first, to determine if the patient has tuberculosis at all, and second, whether the disease of the eye is a result of the general tuberculosis. One should administer old tuberculin with the greatest of care. In one of my cases suffering from retinal tuberculosis of both eyes, the macula of the left eye was completely destroyed and the eye was necessarily blind. The right eye presented an acute hemorrhagic lesion $1\frac{1}{2}$ mm. from the macula. One should not administer old tuberculin for any purpose to such a patient, because, should the test produce a focal reaction with an increase of the margins of the lesion, the patient then would be blind in both eyes.

In this case 10 cc of Aolin was injected intramuscularly for the purpose of stimulating the involuntary nervous system and the bone marrow system, thus increasing the leukocytes. This accomplished the only purpose old tuberculin could effect without the unnecessary reaction of increased temperature and the possibility of focal reaction.

The results from non-specific foreign protein therapy have, in my hands, equalled that of old tuberculin without its many dangerous complications.

Dr. A. L. Whitmire (New Orleans): Dr. Feingold and Dr. Bruns for many years have maintained that ocular tuberculosis is rather scarce here, while the eye men further North consider it rather prevalent. Can it be that our abundance of sunshine and open-air life is responsible for the difference? Not more than forty cases of tuberculous retinitis have been reported. Hemorrhages of the young in this area are absorbed rapidly unless a blood clot forms and involves the nerve, head, in which case fibroblasts occur producing connective tissue and later so called retinitis proliferans. But the choroid is effective by both toxins and the tubercular bacillus and the bacillus itself; in the first mentioned the pathology is microscopical and cannot be detected until after enucleation and is called tuberculous choroiditis, while tuberculosis of the choroid presents a destruction of same and patches from one-fourth to one-third disc diameter occur and are often con-

fused with luetic choroiditis. Possibly violet ray and other forms of light therapy will soon be of aid to us in this condition, especially pertaining to the anterior portion of the eye.

Dr. H. Dickson Bruns (New Orleans): We should be extremely careful in making a diagnosis of tuberculous diseases of the eye. We should be particularly painstaking in searching out the ultimate causes of these diseases before classifying them as tuberculous. A negative Wasserman, in my opinion, is not worth the paper it is written on in *fixing* a conclusion. It no more eliminates the possibility of lues than it does the possibility of typhoid fever.

A spinal fluid examination, as Dr. Buffington has pointed out, is the only way I should say the best way, of making a diagnosis in suspected syphilis.

I do not know why in the South up to this time we have not seen more cases of tuberculosis of the eye, and I don't feel very happy over the situation. I can't help feeling that I must have overlooked many cases which should not have been overlooked. In the North I have seen cases of tuberculous iritis in the clinics of my confrères, and nothing could be plainer; there are definite yellow tuberculous dots over the irides. But I have never seen such cases in New Orleans. The late Dr. Feingold received all of his medical education in Vienna, and you would think from the Viennese literature that in that city most eye diseases were of tuberculous origin. He must have seen hundreds of cases there, and have been thoroughly familiar with them; yet shortly before his death, when I was discussing the question with him, he said he had never seen a single instance here, which is some consolation to me. Perhaps it is still rather rare, but I would urge that we bear the possibility of error in mind, as Dr. Buffington has done. It gives me pleasure to compliment Dr. Buffington on his paper.

Dr. T. J. Dimitry (New Orleans): Dr. Buffington has brought out the facts and proofs that, in the South, we must add tuberculosis as a cause of certain obscure diseases of the eye, and tuberculosis of the eye is more prevalent here than we have been inclined to consider it in the past. I joined with many of my confrères in believing that we were free of it in this section of the country, but this concession on my part was made in deference to local authorities, though contrary to my former repeated contention of its actual existence. We must recognize that this disease has always existed and that we were simply unable to accept its existence because we limited our clinical evidence to laboratory findings.

It must be fundamentally recognized that no disease of the eye exists without cause. Uveitis

is not an isolated entity, nor the supposed essential atrophy of iris or a proliferating retinitis. Tuberculosis as a possible cause is not to be questioned and we should abandon the method of teaching that they are pathological conditions *per se*. As to location, it is probably more common in the retina than is generally recognized; certainly we have tuberculosis of the optic nerve or its sheaths. Drusen of the optic nerve, I have always considered as being probably tubercular and in many instances the so-called senile cataracts may be attributed to tuberculosis. We have taught particularly in this city that acute iritis was always a manifestation of syphilis but today we know differently and that focal lesions may produce it and that one of the causes is tuberculosis. Tuberculosis as an etiological factor in eye pathology has had a rocky road to recognition in this section of the country and Dr. Buffington has done himself credit in bringing sufficient evidence to overcome an environmental opposition but he stresses that the pendulum must not swing too far in this direction. I wish he had stressed that we carry on an educational campaign with the internists in enlightening them that tuberculosis of the eye may exist wherein they are unable to recognize its existence in other parts of the body without a thoroughness of examination that means perfection.

LIPIODOL IN OTOLARYNGOLOGY.*

F. E. LE JEUNE, M. D.,

NEW ORLEANS.

In the study of the many problems with which we are daily assailed in the realm of otolaryngology, few are more baffling than those which deal with bronchial or sinus conditions. Necessity for accuracy in diagnosis becomes a question of paramount importance.

The progressive development of roentgenology has proved one of the greatest factors in the advancement of accuracy in the field of otolaryngology. The introduction of the opaque oils has served to increase this accuracy. Jackson in 1918 was successful in mapping out the bronchial tree by using bismuth subcarbonate powder. Shortly afterward Lynah outlined abscess cavities by using a preparation of bismuth

*Read before the Mississippi State Medical Association, May 9, 1928.

in oil. While both these methods proved valuable they never gained the popularity deserved, and it remained for Forestier and Sicard in 1922 to present their work on localization of spinal cord tumors by means of lipiodal. The field of possibilities in the use of this opaque oil was immediately recognized and to the laryngologist and rhinologist it has proved invaluable as an aid to more accurate diagnosis. This is particularly true in those border line cases in which all clinical findings are absent or so mild that experience teaches reliance must be placed upon the interpretation of the shadows produced by the opaque oils.

Lipiodol is an amber colored oil which contains 40 per cent iodine in combination with the poppy seed oil. The high percentage of iodine explains the wonderful opacity to the roentgen ray, and its great value lies in the fact that it is perfectly innocuous. It is antiseptic and does not need sterilization before injection.

The introduction of the opaque oils, the simplicity of the technic and the accuracy obtained in the visualization of the bronchial tree and sinuses, both in normal and pathological conditions has convinced us of its value in this particular field of work. Of the several methods of introducing the iodized oils into the bronchial tree, we believe the bronchoscopic method is the method "par excellence" and should be used whenever possible. It consists of performing a simple bronchoscopy with a subsequent direct examination of the bronchi. It presents the opportunity of aspirating a cavity prior to introducing the oil into the segment of lung desired. The accuracy of this technic and the value of a visual examination cannot be surpassed by any other method. Frequently lipiodal is introduced into the trachea by means of a needle puncture in the mid-line of the neck between the thyroid and cricoid cartilages. This method is useful particularly in children and in those patients who have unusually sensitive throats. The injecting of lipiodol by

means of a laryngeal syringe and canula directly into the trachea by way of the pharynx and larynx has proved very successful and practical to us in our routine cases. The ease and simplicity of the procedure usually makes this the method of choice. In addition to the above, Iglauder advocates the use of a specially designed intubation tube, containing a canula through which lipiodal is deposited into trachea. With complete cocainization of the hypo-pharynx it is claimed that deglutition is impossible and that liquids taken by mouth will flow into the trachea. We have never used this method and therefore cannot do more than mention it.

We are well aware that a cough reflex follows the introduction of any foreign substance in the bronchial tree. It becomes necessary therefore to suppress this cough reflex if the introduction of the lipiodal is to be successful. This is accomplished by injecting 3 or 4 c. c. of a 2 per cent solution of novocaine directly into the trachea. Two other important factors are the warming of the lipiodal to increase its viscosity and the position of the patient. Bearing in mind the anatomical structure of the bronchial tree the patient is placed in such a position as to make the segment injected the most dependent. In all but the bronchoscopic cases, gravity determines the flow of the solution into the desired lung. The value of the procedure outlined lies in the correct interpretation of the shadows produced by the iodized oils in the bronchial tree. We are aware of the difficulty experienced in establishing a diagnosis of bronchiectasis even by the roentgen-ray. The advent of lipiodal has converted this difficult problem into one of ease and accuracy. Ballon and Ballon have presented us with an excellent and interesting classification of bronchiectasis based on results obtained with the iodized oils.

In lung abscesses the accurate outlining of the cavity is not only of some help to the thoracic surgeon but repeated injections at intervals aids the bronchoscopist to deter-

mine the healing rate of the cavity. The therapeutic value of lipiodal in lung abscesses is questioned, but the cases coming under our observation seemed to improve more readily when lipiodal was used. Deviations and displacements of the trachea as well as bronchial fistulas are clearly outlined and recently lipiodal has been used to outline non-opaque foreign bodies.

For obvious reasons we believe that pneumography should be performed by one skilled in the use of the bronchoscope or the laryngeal mirror plus the laryngeal syringe and canula. Properly performed the introduction of lipiodal is easy and without risk to the patient and the end results constitute an appreciable advance in the study of the respiratory apparatus.

The value of lipiodal is not only confined to the bronchial tree. It is of equal importance to the rhinologist in solving the many obscure problems arising from paranasal sinus infections. Thorough investigation of suspected sinusitis is never complete without roentgenographic study of these sinuses. Frequently the status of the infected sinus can be accurately determined by the appearance of the roentgenogram. It is generally understood that the relative density in the roentgenograms is proportionate to the amount of pathology present in the sinuses. Mild infections are characterized by moderate haziness while denser shadows determine the presence of thickened membrane, probably muco-periosteal changes of varying degrees and neoplasms. While the roentgen-ray presents us with invaluable information, it does not always give us a true interpretation of the amount of pathology present. Chronic infections with a dense fibrosis or periosteal changes often produce marked clouding which is difficult to distinguish from an active empyema without taking into consideration the clinical symptoms. The amount of this involvement cannot be determined except by injecting with an opaque substance and with subsequent visualization we are astounded with the amount of pathology present.

All attempts at injecting the maxillary antrum are directed to the normal opening. If an empyema is present the pus is first washed out and the lipiodal introduced until the overflow warns us the cavity is filled. The patient's head is inclined laterally and we believe it is highly important that the antrum be filled completely. The resulting radiographs are closely observed for any filling defects. The antero-posterior and lateral views are requested. The normal pictures will show the lipiodal in close contact with the bony outline of the antrum. Any increase in the distance between the bony outline of the cavity and the lipiodal signifies a thickening of the lining membrane, which of course is a pathological condition. This thickening may vary from a few millimeters to practically a complete obstruction of the antrum. We have had several cases in which irrigations and transillumination proved negative and roentgen-ray merely demonstrated a mild degree of density. Injection of lipiodal disclosed the astounding fact that it contained an unusual amount of pathology.

We occasionally experience some difficulty in determining whether or not the sphenoidal sinus has been opened. Lipiodal injection of the suspected cavity has in several cases clearly demonstrated the opaque material to lie outside of the sphenoidal cavity, probably in a large posterior ethmoidal cell overlying the sphenoid anteriorly and laterally. In conversation with a radiologist in one of our large institutions surprise was expressed at the number of opaque injections coming under his observation following sphenoidectomy in which this cavity had not been touched.

Direct injection of the sphenoids has been of great value in determining the pathology and size of the sinus. We occasionally find a cavity with an unusual lateral extension and also extending beyond the median line. In these we usually find the sphenoid on the opposite side correspondingly smaller. Due care must be exercised in the introduction of the opaque oils into the sphenoidal sinus. Particularly is this true if the nor-

mal ostia is hard to locate. The possibility of puncturing the cribiform plate and introducing the oil into the meninges must be constantly kept in mind.

The determination of pathological conditions within the sphenoid and ethmoidal sinuses has been made more accurate by the use of opaque oils in the study of the function of these sinuses by the displacement method of Proetz. Repeated radiographs taken at intervals demonstrate the emptying rate of these sinuses and the diagnosis is established by a study of the rapidity or sluggishness of this emptying time. The addition of cinnamon oil or one of the dyes to the iodized oil has proved of value to us in the displacement study of the ethmoidal labyrinth. The patient is able to inform us how long he is conscious of the odor of the oil, or by examination we can determine from the appearance of the nasal mucosa whether or not the labyrinth has rid itself of the colored oil.

Our attempts at injecting the frontal sinus has not proved very satisfactory. In the cases injected we were unable to gather any additional information to that which we possessed from previous radiographs. Stenson's duct was injected in several cases and the presence of calculi and stenosis were determined.

The unanimous opinion expressed by all writers is that the use of lipiodol is contraindicated in the bronchial tree in cases of active pulmonary tuberculosis. With this in mind Iglauer and Kuhn have introduced brominized oil for use in tubercular conditions of the lungs. Patients are warned to refrain from swallowing lipiodol either at the time of introduction or when coughing up the injected oil. While innocuous within the bronchial tree and nasal cavities, lipiodol produces some degree of iodism when taken into the stomach.

The innocuousness of the oil, the facility of technic and accuracy of diagnosis in certain obscure conditions, the relief and comfort presented the patient as a result

of the diagnosis, establishes to us the value of lipiodol in the field of otolaryngology.

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DISCUSSION.

Dr. Gaudet (Meridian, Miss.): I won't attempt to get up to discuss this paper since I don't have occasion to do very much sinus outlining. I have been personally to Chicago and seen this work. I also know of the Pretz method, he is a great advocate of the vacuum method.

He has developed a wonderful technic in doing that work.

Lipiodol is useful because it helps us do better work. It shows us errors we make in diagnoses in sinus work.

If we inject lipiodol after operative cases it shows us if we leave the work incomplete. I had hoped to go to St. Louis and see Dr. Pretz.

If lipiodol is put in the maxillary antrum we discover cystic degeneration, and see how to cure chronic condition of antrum.

I feel that Dr. Lejeune has brought us some valuable information in regard to lipiodol.

Dr. ? (Meridian, Miss.): Mr. Chairman: I have enjoyed Dr. LeJeune's paper very much in which he showed the value of lipiodol from a diagnostic standpoint, but not for its curative value.

We diluted lipiodol and outlined the sinus.

Lipiodol is an expensive preparation and it is well to dilute. Long injection of forty ccs. can be used with no bad results in cases of questionable methods and long standing, but not questionable cases when we find no mastoid infection, some-

time we are justified in the suffering of the patient to use lipiodol.

Recently in a personal talk, Dr. Pretz of the Radiological Society of Missouri talked at length of placing a patient in a reclining position with tip of chin lifted, and introducing four or five ccs. of lipiodol in the nasal cavity for successive periods until the sinuses were involved. We inject each cell, and so far found it possible to inject with Pretz method only. We find it best to do injection directly.

I think it is well to mention lipiodol for its therapeutic effect. I feel that lipiodol is beneficial in abscess cases and bronchi cases which have upon injection shown marked improvement.

I have used 40 per cent iodine with lipiodol before operation. Of course we have to have a knowledge of the type of shadow cast.

Dr. Williams (Meridian, Miss.): I think we are indebted to Dr. LeJeune for bringing this subject before the convention. I consider it a valuable aid in diagnosis in many cases, but very little value in acute cases. My experience has been with sinuses.

In one particular I didn't think much of the technic. If he diluted lipiodol he didn't mention the fact. I think it is generally advisable to use 1 part lipiodol to two parts olive oil. It is not necessary to sterilize. Use 10 cc as the normal sinus will take 10 cs. to fill unless there is a small antrum which can be judged by roentgen-ray beforehand.

The natural opening is the best place to put it, but it is perfectly safe to use the trocar. Use very small instrument with a blunt point, but if you can't find the natural opening it is very easy to make opening in the middle meatus. Dr. LeJeune when he can't find the natural opening makes a small opening with a sharp instrument near the region of the natural opening, but it is hardly necessary to use where lipiodol can be put in the nose, which can be done in practically all cases but frontal sinus infection.

Sometimes a molar has been extracted. A large number of cases have no infection, but pain caused by an abscessed tooth which has been extracted. In a week the patient will come in again. Examination and roentgen-ray shows very little inflammation; positive by injection of lipiodol in enlargement and cases of thickness of the membrane of the floor.

You come to make real investigation, and find a case of a small abscess which is completely blocked off, creeping out chronic around the tooth. The most frequent symptoms in my experience

is sneezing and nasal dripping. Very often we find a large cystic degeneration of larynx.

The injection of lipiodol in the sphenoid sinus is injurious, and one to regard as dangerous, and cause instant concern.

My experience has been limited, but it is one of the best means we have to get at chronic low-grade infections, and where it is hard to convince a patient that an operation is necessary on maxillary sinus.

I think lipiodol is to be used more in the surgical cases for when we can show a picture it is never difficult to get a patient to consent to an operation.

ENDOCARDITIS.*

C. L. SIMMONS, M. D.

HAZLEHURST, MISS.

Endocarditis is an inflammation of the endothelium of the heart cavities and particularly of the valves. This term is frequently mis-applied. Acute endocarditis can probably not occur without some myocarditis, and myocarditis probably does not occur without some endocardial disturbance, and perhaps some pericardial irritation. This is especially true in endocarditis that occurs during any acute infection. The greater the amount of myocarditis, the more doubtful is the heart strength in the near future. The greater the amount of endocarditis, the greater the doubt of freedom from future permanent valvular lesions.

Endocarditis may be divided into acute, septic and chronic. To go into the full details of each classification would require a book; therefore I shall only touch lightly on each class.

It is often difficult to decide when acute endocarditis has developed, but with the knowledge that the endocardium often becomes inflamed during almost any of the acute infections, the physician should re-

*Read by title only before the Section on Medicine, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 14, 1929.

peatedly examine the heart for murmurs and other evidences of endocarditis. It has been shown positively that acute endocarditis is due to micro-organisms, generally streptococci, staphylococci and, more frequently than once believed, gonococci. The most frequent causes are acute rheumatic fever, diphtheria, pneumonia, cerebro-spinal meningitis, scarlet fever and typhoid fever. We should always be on the alert for bad teeth and bad tonsils. Influenza is responsible for a number of our heart infections.

It may be noticed by the above classification that the terms acute and septic endocarditis are used. It is to convey the fact that there may be no etiologic distinction between the two forms, and it is impossible to decide clinically in the beginning of the disease. In other words, the difference in inflammation in the two cases is really one of degree, and the classification is made to coincide with this probable fact.

Chronic endocarditis with permanent lesions of the valves may become an acute inflammation with an infectious provocation.

It has been shown that even in a few hours after endocarditis has started little vegetations composed of fibrin, white blood cells and platelets may develop. Some of these may have small pedicles and are likely to become loosened and fly off into the blood stream. These vegetations are more likely to be on the left side of the heart. Therefore, the consequence is a more fre-

quent permanent disability of the valves of the left side of the heart and the mitral valve is the most frequently involved.

Repeated careful examinations of the heart during acute infections will generally show signs of endocarditis if it is present. On the other hand it may be so insidious as not to be noted until valvular lesions occur. In rheumatism there is a slight rise in temperature and there is also discomfort in the region of the heart accompanied by slight dyspnea. Real pain is seldom present unless the pericardium is affected. If the myocardium is much inflamed at the same time, the heart becomes more rapid and the blood tension lowered. The apex beat diminishes in intensity and perhaps is not palpable.

The pain is often referred to the epigastrium, especially in children. The patient is often nervous, restless and sleepless. In simple endocarditis emboli rarely occur. If they do of course the signs will be in the part where the infarct occurs. If there is a diastolic murmur, there can be no question of serious endocarditis having occurred.

On account of my limited time I shall not take up symptomatology and treatment of endocarditis. I shall say that we should never wait for a murmur to make a diagnosis of endocarditis. The clinical record of the patient when properly taken, is frequently worth more than a physical examination. As to treatment, it is useless to say all foci of infection should be removed when possible and the patient treated in a symptomatic manner.

CASE REPORTS AND CLINICAL SUGGESTIONS

VACCINA INFECTED TATTOO.

CASE REPORT.

A. G. WILDE, M. D.,

JACKSON, MISS.

Punctuated throughout that twilight zone which is liable to surround haunts of soldiers and sailors, are small booths purveying an article of ancient, but hardly distinguished lineage—the tattoo. Seldom is the pigment manipulator long in one locality, as the nature of his calling soon exhausts the available patrons. Also, when the flare-back of his aseptic sins becomes too pressing, he moves on to newer and less cognizant fields.

As side issues, he at times adds other lines, as profitable as they are illicit, *e. g.*, he operates a cache for stolen goods, he becomes middle-man for “dope-rings,” or acts as agent for various brothels that allow a “rake-off” from such customers as he succeeds in steering their way. His nocturnal hours and the nature of his clientele render the last not unusually difficult, so many of his prospects being in an evanescent period of currency and spirituous elation.

Seldom is any approximately normal and mentally matured man tattooed while he is strictly sober. Almost without exception the so-called artistry is thenceforth a source of mortification. While he may have given a half-month's pay to have it put on, he will usually within a few days, offer several months pay to have it taken off. It is also noted that the advent of an older soldier or sailor, already well illustrated, is liable to engender something of an epidemic of tattooing among the younger

and more easily influenced members of his organization.

Tattooing is one of the most ancient and primitive attempts at self-adornment, although among semi-civilized peoples it may also have a religious significance, be an indication of caste or personal attainments, or even be credited with therapeutic virtues.

As the majority of tattoo “artists” lack even a bowing acquaintance with the elements of sterility, all manner of accidental contamination is liable. Cellulitis in varying degree is always produced, while lymphangitis, erysipelas, chancroid, tetanus, tuberculosis, and syphilis, have been reported. A recent tattoo is easily recognized on account of being raised and roughened, frequently hot and tender, and from two to four weeks must elapse before the area returns to approximately normal.

Removal of a tattoo is always difficult, as the needles penetrate the true skin depositing the pigment throughout its depth, and well into the subcutaneous tissue. Examination of a section shows these particles to be surprisingly large, and they may also be found in the adjacent lymph-glands.

Usually complete excision is the only effective method of eradication, and resulting extensive defects must be repaired by grafting. If attempts are made to cover large portions of a limb with sliding grafts, the resulting constriction across the long axis may be sufficient to produce peripheral edema. Davis sums this up well in his “Plastic Surgery”:—

“The only way to dispose of tattooed skin is to excise the area. For small areas the

excision may be done at one time with immediate suture; for the large, partial gradual excision with suture each time should be employed. A large area may be completely excised, and after the edges have been drawn in as much as possible, the defect may be grafted. Unless the full thickness of skin is removed, the pigment cannot be entirely eliminated."

A non-surgical procedure that is sometimes efficacious is the production of a superficial scar to replace the pigment bearing skin, by means of chemical action. Many irritants have been suggested for this purpose, e. g., chromic acid, carbolic acid, acetic acid, tincture of cantharides, potassium nitrate, etc. The best known and probably the most effective is that of Variot, and which was again described by Shie in the *Journal of the American Medical Assn.* Jan. 14, 1928.

The area to be removed is covered with a concentrated aqueous solution of tannic acid, which is then well tattooed into the skin. The needles must actually penetrate through a layer of the solution, and carry it physically into the substance of the corium. A silver nitrate stick is then rubbed in vigorously, and allowed to act until the surface becomes black from the action of the silver tannate. The fingers of the operator must be protected by rubber gloves.

Within a few days a slight inflammatory reaction sets in, and a closely adherent crust forms. After two weeks this crust comes off spontaneously, the corium and epidermis underneath having regenerated, and the area is found to be covered with a superficial pink cicatrix, which gradually becomes of normal color.

The following case is of some interest on account of the unusual form of accident-

al contamination, and for which, strange as it may seem, the tattoo "artist" was not responsible.

Pvt. 1st Class L. E. G. Service Battery, 15th Field Artillery, aged 23 years, was tattooed in San Antonio, Texas, March 1, 1929, and what purported to be an allegorical ensemble placed upon his left upper arm. This consisted of a scantily bedecked, but liberally bepainted female, entwined in dice, cards, guns, knives, and bottles, the whole bearing the caption "Man's Ruin."

This went through the usual phases of a recent tattoo, and for a few days the entire upper arm was quite tender and swollen. Three weeks later, when this reaction had apparently subsided, he was vaccinated near its upper edge. Three days thereafter, "blisters" appeared in that portion of the tattoo adjacent the vaccination, thence spreading rapidly until both the lady and her halo were completely submerged beneath a flood of vesication, and reduced to an indistinguishable blob.

The entire area then went through the customary phases of an orthodox vaccination, although on a scale usually associated only with the calf in the laboratory. It finally subsided into a roughly quadrilateral area, five by eight centimeters in diameter, and covered by a dark brown, adherent and deeply wrinkled crust, resembling that which forms on a can of dried varnish. No treatment beyond mechanical protection was attempted.

During the second week this peeled off almost whole, leaving a thin pink cicatrix beneath, but both the lady and her satellites were found to have passed into history. If the supposition is true that the resulting immunity is proportional to the area covered by the vaccination, that of this soldier should be wondrously effective.

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THE NEW PRESIDENT OF THE AMERICAN COLLEGE OF SURGEONS.

One of the best known surgeons in the City of New Orleans has just been honored by election to the office of President of the American College of Surgeons. Dr. C. Jeff Miller, upon whom the College has seen fit to bestow its greatest honor, has practiced for many years in this City. He has made a reputation for himself second to none as a surgeon of exceptional merit, a teacher of renown and distinction, and an earnest and wholehearted participant in the activities of the medical profession. The Journal extends its heartiest congratulations to Dr. Miller, and feels that in his election

that not only has a charming and distinguished southerner been honored, but that also the high standing of the medical profession of the South has been recognized and the city and state in which he resides will shine in the reflected glory of this election. New Orleans and Dr. Miller are doubly complimented because, at times these elections, to a certain extent at least, depend upon geographical availability, and it was only several years ago that our Dr. Rudolph Matas was similarly honored. Despite this fact, the distinction of heading a great surgical society was conferred upon this able representative of the New Orleans and Louisiana profession, Dr. Miller.

DR. MARVIN CAPPEL.

A shocking tragedy occurred in Alexandria the second week of November. Dr. Marvin Cappel was shot and killed by an insane man. The death of this well known Alexandria physician removes from the ranks of the Louisiana State Medical Society one of its most energetic, active and valuable members. Dr. Cappel was at the time of his death Chairman of the Section on Public Health and Sanitation. He was very much interested in the subject of public health and had under way active plans for a most interesting program for his section at the next annual meeting of the State Society. The Journal appreciates that all of the members of the Louisiana State Medical Society join with it in expressing heart-felt condolence to the immediate family of this loved physician.

The killing of Dr. Cappel in another added to the fairly long list of murdered doctors that have occurred in this country in the past few years as a result of delusions of insane individuals regarding their treatment by physicians. It is one of the risks apparently that all physicians must take in the practice of their profession.

ANTIRABIC VACCINATION.

Dr. D'Aunoy* reports from the laboratories of the Charity Hospital the results of eighteen years antirabic prophylactic treatment. The vaccine was prepared along the lines suggested by Harris, subject to some slight modification in the technique. It is not necessary to go into the exact method of preparation of the desiccated virus, suffice it to say that when the preparation is complete the dosage is based upon a unit which consists of a minimal infective dose to an experimental rabbit. There are given 250 of these units as an initial dose, and the quantity is doubled until the maximum of 2,000 is reached. In the average case eleven treatments with 17,750 units is administered.

During the past fourteen years 5,125 patients have been treated. This is the interesting feature of the report, that despite the large number of prophylactic vaccines given, the results have been so splendid. Incidentally, it may be mentioned that 2,380 followed injuries of animals that were proven to be rabid. In only five cases was there non-protection following complete treatment; in only three cases treatment paralysis developed, and in one of these the patient died. This is a magnificent record of protective treatment of disease which in a goodly number of cases at least, would have proven fatal had it not been for the protection afforded by properly administered desiccated virus.

THE CALENDAR.

It is the purpose of the Journal to publish each month a calendar of the regularly scheduled medical meetings that will take place in New Orleans the month in which the Journal appears. It is believed that this calendar will have a double purpose; first, putting before the eyes of the New Orleans doctors in definite form the dates of these meetings which they should attend or would like to attend; secondly, it is

sincerely hoped that the physicians of Louisiana and Mississippi or other states visiting in New Orleans will take advantage of their knowledge concerning the meetings that are being held, and should they so desire take the opportunity of attending them. There is always difficulty for a visiting doctor to find out what is going on in the medical world in the City at a given time. The calendar may supply this want in part. Most of these meetings are open meetings and visitors are welcome to them.

The Editor would ask Secretaries of Hospital Staffs, Medical Societies, and so on, to notify the office of any change that will take place in their calendar for the coming month. Any special meetings that are to be held should always go into this calendar, and information concerning them is requested.

ON HEALTH WEEK.

"Recurrent, thorough and repeated physical examinations if made for a large part of our population will be more effective than any other similar measure of which I have knowledge in the promotion and maintenance of physical and mental well-being." Thus writes Dr. Ray Lyman Wilbur to the Five Counties Medical Society of New York, which is participating in a health campaign. The health week which will be held in New Orleans December 2-7 is similar to the one which is being conducted in New York and about which Dr. Wilbur writes; but whereas this is the first of such campaigns in New York City, New Orleans is undertaking its third annual one this month. As far as we know this city was the first to institute a health week. The two that have been given in the past have undoubtedly done much to stimulate public interest in health. The immediate results may not be obvious but undoubtedly persistency and pertinacity in purpose accomplishes much. The population is having impressed upon them the importance of personal health examinations. Efforts should not be relaxed and these campaigns should be conducted yearly, regularly and systematically.

*D'Aunoy, Rigney: Antirabic Vaccination by Means of Desiccated Virus. *Am. J. Public Health*, 29:986, 1929.

HOSPITAL STAFF TRANSACTIONS

PROCEEDINGS HOTEL DIEU STAFF MEETING.

October 21, 1929.

The monthly meeting of the Hotel Dieu Staff was called to order at 8 P. M. by Dr. J. T. Nix, Chairman, Dr. Lucien A. LeDoux, Secretary, at the desk.

The roll call was taken by the Secretary and over three-fourths of the staff membership were present. Membership of the LaFourche Valley Medical Society were the honored guest of the evening.

SCIENTIFIC PROGRAM.

Dr. Homer Dupuy presented a case of "voice without a larynx," and showed the patient, who had had the larynx removed about a year ago; since that time he has been able to develop voice sounds and pitch to an extent unusual in this type of case.

Dr. Dupuy also reviewed his personal experiences with ten cases of deep cervical abscesses with one death in this series. He illustrated his talk with anatomical charts and discussed very fully the diagnosis and his method of surgical approach in these cases.

Both presentations were discussed by doctors Val Fuchs, M. Meyer, Jules Dupuy, H. Dansereau and M. Couret.

Dr. H. T. Simon gave a very interesting presentation on the subject of surgical treatment following infantile paralysis illustrated with motion pictures. Doctors Jerome Landry, M. J. Gelpi, O. C. Cassegrain and M. O. Miller discussed the subject.

The Committee on Records presented an abstract of a very interesting case of estivo-autumnal malaria. This case was discussed by Drs. Philip Dansereau, J. E. Landry, P. Gelpi and M. Couret.

Under reports the one of the Secretary revealed an increase in the number of consultations and autopsies held during the past month as compared to the same time last year.

Dr. H. T. Simon, Chairman of the Committee on Records, reviewed very thoroughly the subject "progress notes" and reported the records of the hospital as being very carefully kept up.

There being no further business, on motion, duly seconded, the meeting adjourned.

LUCIEN A. LEDOUX, M. D.

McCOMB INFIRMARY STAFF MEETING.

October 17, 1929.

Abstract—Ruptured Spleen. Dr. E. R. Gordon.

Patient—N. C. M., female, aged 12 years, was brought to the infirmary at 2 P. M. on May 20, 1929, for roentgen-ray study of the right wrist, the mother thinking she had received an injury by a fall of 12 feet from a tree. Examination revealed no fracture of bones, but severe pain in the abdomen, with some rigidity; pulse, 72; respiration, normal. The severity of the pain gave symptoms of internal injuries. Total leukocyte count at 4 P. M. was 17,500; hemoglobin, low. No blood found in the urine. An exploratory operation was determined upon. Median incision was made. Abdomen was full of blood, but no injury to the intestines which was first suspected, could be found. On enlarging the incision, the spleen was shown almost entirely torn loose from its attachment and bleeding profusely. Hemorrhage was arrested; spleen removed. While patient suffered a great deal from shock, she made an uneventful recovery. When last seen she showed no ill effects whatsoever from the removal of the spleen and from the operation.

Abstract—Ruptured Spleen. Dr. E. R. Gordon and Dr. D. T. Brock.

Patient—Mr. H. Q., white, male, aged 37 years, farmer, was suffering from severe pain in the left side. Subsequent examinations showed fracture of the seventh and eighth ribs. There was a history of having been kicked by a mule at the site of pain; patient had afterward walked a mile to his home. At 10:30 A. M. a total leukocyte count was 23,000; condition of shock more marked; pulse more rapid. An exploratory operation was determined upon and performed without delay. Incision was made for a special examination of the spleen, which was found to be ruptured. Spleen was removed and wound closed without drainage. Patient made a slow recovery but when last examined was able to do light work.

Abstract—Ruptured Spleen. Dr. E. R. Gordon and Dr. S. Paul Klotz.

Patient—Mr. L. G. M., aged 45 years, white farmer, was admitted to the hospital at 1 P. M. on June 30, 1929. He had been injured in a car wreck by the steering wheel and was brought to the hospital one hour after injury. There was severe pain in the abdomen; pulse, 70; evidence of internal injuries, verified by a leukocyte count of 23,500. Diagnosis of ruptured spleen was made and immediate operation was determined upon. At operation, spleen was found ruptured and was removed. Patient suffered no shock and very

little more inconvenience than from an ordinary laparotomy. Apparently complete recovery.

Abstract—Osteomyelitis of Fibula. Dr. S. Paul Klotz.

Patient—F. J., aged 4 years, was admitted August 25, 1929. He had been treated for osteomyelitis. Leukocyte count was high and there were signs of pus formation. Roentgen-ray examinations showed a large sequestrum of bone apparently being separated from the fibula. Free incision failed to relieve the condition, and an amputation was necessary. Patient made a complete recovery.

The discussion of the first three cases brought out the fact that a complete leukocyte count should be done when there are symptoms of internal injuries and prompt operation performed, instead of making reports to friends and relatives that if they have no internal injuries they would get well. The fourth case was discussed by Dr. Klotz because of the remarkable way in which nature was taking care of the diseased bone.

CHARITY HOSPITAL MEDICAL STAFF MEETING, OCTOBER 22, 1929

At the first meeting of the Medical Section, Dr. J. H. Musser led a discussion concerning efforts being made to substitute quarterly staff meetings for the usual monthly meetings because of the great number of meetings necessary for staff members to attend. Dr. Chaille Jamison reported that a committee had referred the matter to the American College of Surgeons for their approval, and that no action had yet been taken. Finally a motion was made and carried for the suggestion as to quarterly clinical meetings with monthly lunch meetings to be submitted to the Hospital Board for their approval.

Dr. M. M. Wintrobe presented the first case. A white male, aged 52 years, complaining of weakness, had been in poor health for the past year. His skin was yellow and he complained of being nauseated. He gave a history of having passed a large quantity of bloody tarry material per rectum following a purgative, and had been in bed for three months following this. He also complained of some pain and tingling in his lower extremities and urinary frequency. Physical examination showed a thin, weak, sallow individual. There was a mild retinitis. No cardiac enlargement. Blood pressure 125/85. Abdomen was tense with a palpable tumor mass in the left hypochondrium, probably the spleen. The liver was not palpable. Reflexes were exaggerated. The blood count showed 4,750,000 erythrocytes and 48 per cent hemoglobin, with achromia, anisocytosis, poikilocytosis, 2 nucleated cells, reticu-

lyocytes. Leukocytes 52,000, 85 per cent neutrophils, 3 per cent myelocytes. The icteric index was 9, and the van den Bergh was negative. P. S. P. 35 per cent, Wassermann negative. Gastric analysis showed free HCl 34, total 67. Fragility 42 to 30. The roentgen-ray examination was negative except for a large spleen and a suggestion of some questionable lymphatic enlargement in the mediastinum. The case was presented for diagnosis with the suggested possibility of it being an early case of myelogenous leukemia. In discussing the case Dr. Jamison recalled a similar case in his experience which had not come to autopsy. He thought, however, that the condition was not a leukemia.

Dr. Chaille Jamison presented the second case, a colored female who had been in the hospital for one year with tuberculosis. Only one lung was involved. Pneumothorax had been tried but had failed. Following this a phrenicoexoresis had been done with satisfactory results. The second case, a colored female with tuberculosis, had had a pneumothorax on the left side with good results. This patient, however, had shown a peculiar reaction following the first chest filling, complaining of pain in the abdomen. She had had three fills. The third case was one of pulmonary tuberculosis, in which a phrenicoexoresis had been attempted without results and a thoracoplasty had been done. Dr. Durel discussed the cases from the standpoint of the value of artificial pneumothorax in certain cases of pulmonary tuberculosis.

WILLARD R. WIRTH, M. D.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL STAFF MEETING,

OCTOBER 10, 1929.

Abstract.—Fracture of the Skull Involving the Base (2 cases).—Dr. H. H. Johnston.

Case 1:—Colored male, aged 34 years, laborer, admitted to hospital September 25, 1929, in a comatose condition.

Present Illness—One hour before admission, patient was riding on a truck which overturned on a curve and pinned him beneath it. He was conscious when the truck was lifted from him but friends said that in about five minutes he went into an unconscious state. Past History and Family History were irrelevant.

Physical Examination—Well developed and nourished, in a profound state of coma. Pulse 82; temperature 98° F.; respirations 22, Cheyne-Stokes type. There was considerable swelling over left superior maxillary and temporal regions but no crepitus could be elicited or no evidence of

fracture found. There was marked exophthalmos and sub-conjunctival ecchymoses of the left eye. The left pupil was almost pin-point in size; right pupil moderately dilated; both reacted very sluggishly to light. Left fundus examination showed marked choking of disc and small areas of hemorrhage throughout retina; right eye grounds negative. There was a moderate discharge of blood-stained cerebro-spinal fluid from the right ear. Epistaxis was profuse. Oral examination shows post-nasal hemorrhage only. Biceps, patella and superficial reflexes were exaggerated; Gordan and Babinski signs were positive. Blood—Hemoglobin, 87 per cent; leukocytes, 18,000; differential leukocyte count: small lymphocytes, 7 per cent; neutrophils, 93 per cent (60 immature). Wassermann and Kahn tests negative. Urine—Few hyaline and finely granular casts, rare pus cell. Roentgen-ray—Fracture of occipital bone, extending into the base of the skull.

Procedure—Spinal puncture was done as soon as possible after admission and 9 cc. of blood-stained spinal fluid was withdrawn. The pressure was equal to 30 mm. of mercury, with jugular pressure 40 mm. Examination of spinal fluid showed 34 leukocytes per cu. mm.; small mononuclears predominating; globulin increased (4 plus). Six hours later 20 cc. of 50 per cent glucose was given, followed by slight improvement of pulse and respiration. This was repeated the following day after no remarkable change in condition. Spinal puncture was again performed the third day after admission and pressure was the same as on the previous examination. The fluid was very cloudy and the leukocyte count was 8,420 with 96 per cent polymorphonuclears. Stained preparation showed many polymorphonuclear cells but no organisms and culture showed no growth. Spinal fluid Wassermann test negative. The following day the temperature was 100 degrees F., its highest level, and pulse was 96. Both declined after administration of 1,000 cc. of 5 per cent glucose solution. This was repeated daily. On September 17, six days after admission, patient regained consciousness momentarily for the first time following the accident and the temperature at that time was normal. Patient could then take nourishment by mouth and the mind rapidly cleared. The exophthalmos of left eye became barely noticeable and patient was well enough on September 27, to be removed from the hospital. The vision of the left eye on discharge was 20/50 and hearing of left ear 20/30.

Case 2. White, male, aged 28 years, admitted to the hospital on September 2, in a semi-conscious condition.

Present Illness—Two hours before admission, an automobile which he was driving at a high rate

of speed skidded, went over an embankment, and turned over twice pinning him beneath it.

Past History—Has always been in perfect health; no acute diseases. Family History—Not remarkable.

Physical Examination—Well developed and robust young man, in an extremely shocked condition. The scalp showed no evidence of injury but there is a triangular laceration about 4 cm. in length over and lateral to right eye, involving lacrimal gland which has been almost completely torn away. The laceration has denuded the obicularis oculi in two places and extends deep into orbit through Tenon's capsule. The optic nerve can be felt and crepitus of the roof of the orbit elicited. There is considerable supra—and sub-orbital ecchymosis of both eyes. The external ocular movement is normal. The eye grounds show nothing remarkable. The nose is shrunken and pushed slightly to the left. The septum has been crushed and there is considerable hemorrhage from overlying mucosa. A deep laceration extends completely through the anterior part of the inter-nasal septum, involving the vomer and is bleeding profusely. The upper incisor, canine, and premolar teeth on both sides are loose in their sockets with moderate bleeding from the gum margins. The heart sounds were distant; rate 130; pulse volume very weak. The remainder of the physical examination is essentially negative except for abrasions over right chest. Blood—Leukocyte count, 12,700; differential leukocyte count: small lymphocytes, 13; neutrophils, 86; eosinophils, 1; hemoglobin, 77; erythrocytes, 3,408,000. Urine—Few pus cells; otherwise not remarkable. Roentgen-Ray—Multiple fracture of skull, mostly right malar, nasal, and superior maxillary regions.

Procedure—The patient was immediately given 1,000 cc. of glucose, 5 per cent and 10 cc. of hemostatic serum. The right lacrimal gland which had been torn from its capsule and dirt were removed and laceration closed. The nose was packed to check hemorrhage. Patient was then typed for blood transfusion and 500 cc. of blood was given. This improved pulse volume. The temperature rose to 102 degrees F., the following day but there was no evidence of increased intra-cranial pressure. Thereafter he was treated palliatively.

Patient was removed to his home on the eighth day following admission, able to sit alone with no mental symptoms evident and temperature 99.2 degrees F.

Abstract—A Case for Diagnosis.—Dr. J. A. K. Birchett, Jr.

Patient—White, female, aged 63 years, Jewess, single; admitted to hospital September 22, 1929.

Present Complaint—Had profuse hemorrhage from stomach last night thirty minutes after eating supper, which consisted of milk and soft toast. Just a few minutes before hemorrhage occurred had gotten out of bed to use commode at bedside. As she was sitting propped up in bed, suddenly felt mouth fill with salty material and vomited a pint of dark red fluid with clots of blood and curdled milk in it. Felt no pain and had been well all day.

History of Present Complaint—About the middle of August began having severe pains in left leg below the knee in region of head of tibia. This area became swollen and tender and a diagnosis of periostitis of tibia was made from local symptoms and roentgenograms. At that time she was brought to the Sanitarium where the condition was treated. Given large doses of atophan. A few days after taking this medicine, began to complain of burning in the pit of the stomach and heart burn. The atophan was discontinued and an alkali given with improvement of symptoms. The condition was not considered important. Several doses of mercurochrome and small tonic doses of nearsphenamine were administered during her stay. Only one of the mercurochrome treatments caused her to complain of abdominal cramps and nausea. The leg condition became sufficiently improved for her to be removed to her home on the fourteenth day after admission. There the same treatment was continued, including atophan. The fifth day at home, 0.3 gram of nearsphenamine was administered. The night following this treatment, patient complained of severe abdominal cramps, vomited, was very tender over gall-bladder region, and had fever of 100° F. Morphine was given for pain. The next day the pain was still acute over the gall-bladder region and temperature was 102° F. The blood count showed a moderate elevation of leukocytes with a high polymorphonuclear count. All food was stopped and an ice bag was kept over the gall-bladder region, with subsidence of temperature 72 hours later. From this time on patient complained of heart burn and severe pain in the back. She continued to complain of pain in the leg although it was not as severe as previously. With continued digestive symptoms, a diagnosis of ulcer was made and patient kept on a soft diet and alkalies, which she had been taking irregularly since leaving the hospital. Five days later, without pain or other warning, patient vomited between 500 and 700 cc. of blood. There was no evidence of shock, pulse being 80 and blood pres-

sure 140/90. There was still some soreness in the upper right quadrant of the abdomen. Patient was observed twice during the day and was doing well and continued to feel well until September 22, when another severe hemorrhage occurred. At this time there was evidence of considerable shock and the patient was brought to hospital.

Past History—General health good. Radical operation for carcinoma of breast in 1916. Has had burning sensation in pit of stomach for the past eight months; no nausea or vomiting. Patient described condition as heart burn, which was relieved by taking soda. Bowels normal. Circulatory history, respiratory tract history, urinary tract history, all negative. Menopause at 40 years of age; no bleeding or vaginal discharge.

Family History—Three sisters, one with good general health; one has toxic thyroid; one died of carcinoma of the gall-bladder and liver. One brother living and well. No history of tuberculosis.

Blood—September 24; hemoglobin, 33; erythrocytes, 1,244,000. September 25; hemoglobin, 35; erythrocytes, 1,608,000; leukocytes, 6,800; differential leukocyte count: small lymphocytes, 25; large mononuclears, 4; neutrophils, 70; (32 immature forms); eosinophils, 1; no malaria found. Blood transfusion, 500 cc. given September 28. October 11; hemoglobin, 72; erythrocytes, 3,800,000; leukocytes, 10,200; differential leukocyte count; small lymphocytes, 25; large mononuclears, 7; neutrophils, 66 (26 immature forms); eosinophils, 1; basophils, 1. Wassermann and Kahn tests negative. Gastric Contents—October 9; much mucus, acidity—total, 61; free HCL, 43; combined acid, 16; no lactic acid; no blood.

Roentgen-Ray Examination—Constant deformity of cap with narrowing of the pyloric end of the stomach with slight amount of retention in the six-hour plate. Diagnosis of possible early carcinoma of stomach or gastric or duodenal ulcer.

This patient was advised that exploratory laparotomy should be done to ascertain the exact pathology present and to effect a cure. The anemia being of much improved the red cell count being nearly 4,000,000 and the hemoglobin 72, she was allowed to return to her home with the ambulatory ulcer case diet of Rehfuß and although only six weeks have lapsed since her severe hemorrhage she feels so well and is gaining strength so rapidly that she thinks that she is entirely cured and refuses to come back for operation.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL STAFF MEETING

NOVEMBER 9, 1929.

Abstract—Carcinoma of the Stomach; Billroth II Operation in Two Stages.—Dr. A. Street.

Patient—White, male, aged 64 years, married, in restaurant business for 42 years; admitted to hospital September 26, 1929.

Chief Complaint—Vomiting of large quantities. Vomitus consist of the food he has eaten; no fresh blood in it, but at times it is black. No pain. Has feeling of pressure and discomfort in epigastrium preceding the vomiting. Marked loss of weight in last two months. Bowels constipated; no tar-like stools. For past five or six years has had feeling of fullness and discomfort in epigastrium one or two hours after meals; also much belching. Not benefited by soda.

Previous History—The right leg was amputated about the knee for chronic osteomyelitis 24 years ago. Had a suppurative chest condition 30 years ago from which he completely recovered in one year. Has had malarial hematuria. Had jaundice many years ago. Family History—Not remarkable.

Physical Examination—The patient is stockily built, with short neck and chest. Is still stout in spite of his loss in weight. Weak and dyspneic. Blood pressure 140/100. The right leg has been amputated. Physical examination not otherwise remarkable; no palpable masses; no remarkable tenderness.

Gastric lavage yielded a large quantity of foul fluid containing among other things some fragments of grapes which he had eaten five days previously. Urine examination showed a trace of albumin, a few hyaline casts, and numerous pus cells. Blood examination showed erythrocytes, 1,396,000; hemoglobin, 60; leukocytes, 10,500; differential leukocyte count: small lymphocytes, 28; large mononuclears, 7; neutrophils, 64; eosinophils, 1. Wassermann and Kahn tests negative. Gastric contents showed no free HCL; total acid 23; no combined acid; blood (chemical) positive (2 plus); no lactic acid. Radiographic and fluoroscopic examinations showed a much dilated stomach, almost completely obstructed at the pylorus. There was a filling defect at the pylorus suggestive of carcinoma.

Procedure—Preoperative reconstructive measures were difficult. Even with daily stomach lavage and feeding only small quantities of strained liquid nourishment, nothing appeared to get past the pylorus. One quart of glucose was given intravenously each day and glucose and saline solutions be rectum. Twelve prospective do-

nors were tried for blood compatibility, but none were found suitable.

On October 3, under ethylene anesthesia, a high left rectus incision was made. There was a growth located at the pylorus, indurated, round, and one inch in diameter. The pyloric region was not adherent to surrounding structures. There were no palpable lymph nodes. Owing to the poor condition of the patient, two-stage operation was decided upon, and posterior gastroenterostomy was done, placing the stoma transversely to the long axis of the stomach and well to the left. Following this procedure the patient improved rapidly. The wound healed cleanly.

On October 21, eighteen days from the first operation, the abdomen was reopened through a high right paramedian incision. The growth was unchanged in appearance. The pylorus was mobilized and and resected, taking two inches wide of the growth on the stomach side and one-half inch beyond it on the duodenal side.

Convalescence was uneventful. Patient was discharged on November 9. His appetite is excellent and he complains of no digestive symptoms.

Pathologic tissue examination by Dr. Lippincott showed adeno-carcinoma (group IV).

Abstract—Rupture of the Urinary Bladder Due to Muscular Strain.—Dr. H. H. Johnston.

Patient—Colored male, aged 60 years, laborer, admitted to hospital October 9, 1929.

Present Complaint—Pain in lower abdomen and perineal region.

Present Illness—One week before admission while carrying a heavy bale of cotton on his back, suddenly had a sharp pain in the perineal region and middle of lower abdomen. Had to be carried home as walking intensified the pain. At home he found the rectum to be prolapsed for the first time in his life and stool contained a fairly large amount of fresh blood; no control of urine. Urine was highly colored at first and contained a large amount of blood the following day. Hematuria had continued until time of admission. Had become progressively weaker since onset of pain.

Past History—Five years ago had gonorrheal urethritis followed by a stricture which has at times caused considerable urinary obstruction. No operations or serious illnesses. Family History—Not remarkable.

Physical Examination—Patient is a fairly well developed but undernourished negro, obviously very sick and weak; mental condition poor. Most of history obtained from relatives. The retinal vessels showed slight tortuosity and thickening.

Oral hygiene poor with dental caries. The heart sounds were distant, rate rapid, but rhythm regular; no murmurs. Blood pressure 150/110. Slight rigidity over lower abdomen but no distention. Bladder was within the pelvis. Some edema of perineal region but no subcutaneous emphysema or scrotal infiltration. Several large external hemorrhoids. Prostate slightly enlarged but not tender. Some tenderness over lumbar region but no crepitus elicited; no swelling. Reflexes were normal. Blood showed leukocytes 18,300; differential leukocyte count-neutrophils 81 per cent; Wassermann and Kahn tests negativ. Urine showed 1 per cent albumin; hemoglobin, 3 plus; many fresh and abnormal blood cells; some pus cells. Roentgenogram showed fracture at base of articular process of third lumbar vertebra.

Procedure—Due to the extremely poor condition of the patient it was thought best not to attempt any surgical procedures. An attempt, however, was made to pass a retention catheter

but the stricture in the posterior urethra could not be passed. Filiforms were used to dilate the stricture and although patient was incontinent, the urine which was highly blood stained, passed freely. Glucose solution and stimulants were given. An attempt was made to find a donor for blood transfusion but no compatible blood was available.

The following day the patient looked much better; pulse volume had improved and there was no blood in the urine; the flow of urine was free. On the third day, blood again appeared in the urine and the amount of urine was scanty. The perineal edema was slightly increased but there was still no scrotal infiltration. The stricture was dilated and a number 18 French, soft rubber retention catheter was inserted. Bladder was gently irrigated with warm boric acid solution. 1,000 cc. of glucose solution and saline was again given intravenously. Patient became rapidly weaker and died 72 hours after admission.

HIGH HOSPITAL CHARGES.—From Chicago comes news of an interesting attempt to cut the mounting costs of sickness by the construction of a chain of five local hospitals which shall enjoy the benefits of centralized control, a single purchasing agency and other economies which sometimes flow from large-scale operation. The sponsors of the project hope that by good management and the application of modern business methods they can effect savings as great as one-third.

The high cost of sickness to the financial middle class is a pressing economic problem. Complaints are everywhere heard of excessive charges imposed for the institutional care of the sick, even though the service rendered is often provided at a loss. What really interests the family man in modest circumstances is not the fairness of the bills presented to him, but the means at his disposal for meeting them. He knows they are much higher than they used to be, but he rarely takes into account the fact that his patient is getting much more for his money than all the world's wealth could have purchased a generation or even half a generation ago.

Constant recourse to laboratory tests of every description makes for speed and correctness of diagnosis. New serums and vaccines and other products of the laboratory lessen mortality and hasten recovery. The improved technic of the roentgen-ray, both in diagnosis and in treatment, has in itself brought about a beneficent revolution in the practice of medicine and surgery. The resources of surgery have been amazingly enlarged. Operative procedures which not long ago were

undertaken with misgivings, and only as a last resort, have become routine and commonplace. On the whole, the increase of hospital efficiency has far outrun the increase of charges. In chances for life and eventual cure the patient gets more for his dollar than ever before, even though it takes more dollars to see him through.

The poorest free patient today has at his disposal a costly laboratory service that the richest did not command a few years ago. Branches of that service must be kept in operation twenty-four hours a day. Diagnosis and treatment by roentgen-ray involve the unstinted use of costly apparatus and materials. Some of the serums and vaccines employed in diseases as common as pneumonia are manufactured by processes so intricate that a single dose may cost the hospital twenty-five or thirty dollars. Penniless patients often have the most expensive diseases.

Someone must pay. The butcher and the coal man, nurses and orderlies and the purveyors of a thousand supplies want their money and will not be put off. Trustees and well-to-do friends of the hospital may be prepared to meet definite budgeted deficits out of their own pockets, but there is a point beyond which they cannot go; nor is there any good reason why they should, when nine-tenths of their neighbors, including those who draw most heavily upon hospital resources, show little or no interest in the financial welfare of their institution.—The Saturday Evening Post, Nov. 30, 1929, p. 20.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

- December 2. Eye, Ear, Nose and Throat, Hospital Staff, 8 P. M.
- December 6. Physiology Seminar, Tulane Medical School, 5 P. M.
- December 6. Chaille Memorial Oration, 8. P. M. Dr. Willard C. Rappleye, Director of Study, Commission on Medical Education, New Haven, Conn., Orator.
- December 9. *Orleans Parish Medical Society*, Joint meeting with Marine Hospital Staff, 7:45 P. M.
- December 10. Baptist Hospital Staff, 8 P. M.
- December 11. Touro Infirmary Staff, 8 P. M.
- December 13. Physiology Seminar, Tulane Medical School, 5 P. M.
- December 13. French Hospital Staff, 8 P. M.
- December 13. Medical Reserve Corps Branch School, 8 P. M.
- December 14. Election of Officers Orleans Parish Medical Society. Voting between the hours of 10 A. M. and 12 noon; 2 and 5 P. M., and 7 and 8:30 P. M. Annual Dinner Orleans Parish Medical Society, following election at Chess Club.
- December 16. Hotel Dieu Staff, 8 P. M.
- December 17. Charity Hospital Medical Staff, 8. P. M.
- December 18. Charity Hospital Surgical Staff, 8 P. M.
- December 19. I. C. R. R. Hospital Staff, 12 Noon.
- December 19. Eye, Ear Nose and Throat Club, 8 P. M.
- December 20. Physiology Seminar, Tulane Medical School, 5 P. M.
- December 20. Mercy Hospital Staff, 8 P. M.
- December 26. Presbyterian Hospital Staff, 8 P. M.
- December 27. Medical Reserve Corps Branch School, 8 P. M.

The fourth Chaille Memorial Oration will be held December 6, at 8 P. M. The orator of the evening will be Dr. Willard C. Rappleye, who has selected "The Doctor and the Public" as his subject. Dr. Rappleye is Director of Study of the Commission on Medical Education, New Haven, Conn.

SECRETARY'S REPORT.

During the month of November the Society held two scientific meetings, at which time papers were read and discussed as follow:

Monday, November 11:

Symposium on Infections of the Liver and Subphrenic Space. Medical, Roentgenological and Surgical Aspects.

Etiology and Diagnosis of Suppuration in and about the Liver.

By.....Dr. J. H. Musser

Radiological Aspect.

By.....Dr. Amedee Granger

The Surgical Treatment of Subphrenic Infections.

ByDr. Alton Ochsner

Presentation of two cases by Dr. John G. Snelling.

Discussed by Drs. Urban Maes, George R. Herrmann, Chas. W. Duval, J. Birney Guthrie, Allan Eustis, D. L. Watson, S. K. Simon, Chaille Jamison, A. L. Levin. Closed by Drs. Musser, Granger and Ochsner.

At the meeting held November 25 the program was as follows:

Right-Sided Diaphragmatic Herniae (with report of a case).

By.....Dr. T. H. Oliphant

Discussed by Dr. Leon J. Menville.

Diagnosis and Treatment of Intracranial Hemorrhage in the Newborn.

By.....Dr. E. L. King and
Dr. Maud Loeber

Discussed by Dr. G. C. Anderson.

Stabilizing Operations on the Foot in Flail Paralysis; with Motion Picture Demonstration.

By.....Dr. H. Theodore Simon

Discussed by Dr. Paul A. McIlhenny.

At this meeting the following Delegates and Alternates to the Louisiana State Medical Society were elected:

Delegates	Alternates
Dr. F. M. Johns	Dr. Randolph Lyons
Dr. John A. Lanford	Dr. E. L. Leckert
Dr. W. H. Seeman	Dr. Jerome E. Landry
Dr. E. D. Fenner	Dr. J. Birney Guthrie
Dr. Henry Daspit	Dr. W. D. Philips
Dr. M. T. Van Studdiford	Dr. E. H. Lawson
Dr. Chaille Jamison	Dr. Paul J. Gelpi
Dr. D. N. Silverman	Dr. Jules Dupuy
Dr. E. L. King	Dr. Maurice J. Gelpi
Dr. Isidore Cohn	Dr. J. Signorelli

Nominations for Officers for 1930 were made as follows:

PRESIDENT—Dr. C. Grenes Cole, nominated by Drs. Paul J. Gelpi, H. E. Bernadas and Chaille Jamison.

FIRST VICE-PRESIDENT—Dr. Emmett L. Irwin, nominated by Drs. Jules E. Dupuy, H. E. Bernadas and S. M. Blackshear.

SECOND VICE-PRESIDENT—Dr. J. T. Nix, nominated by Drs. Homer Dupuy, H.

Theodore Simon, J. Birney Guthrie and Paul J. Gelpi.

THIRD VICE-PRESIDENT—Dr. Walter J. Otis, nominated by Drs. H. Theodore Simon, John A. Lanford and Jules E. Dupuy.

SECRETARY—Dr. H. Theodore Simon, nominated by Drs. Jules E. Dupuy, P. T. Talbot and H. E. Bernadas.

TREASURER—Dr. John A. Lanford, nominated by Drs. Lucien LeDoux, H. Theodore Simon and J. S. Hebert.

LIBRARIAN—Dr. Daniel N. Silverman, nominated by Drs. Homer Dupuy, S. M. Blackshear and J. S. Hebert.

ADDITIONAL MEMBERS

BOARD OF DIRECTORS.

DR. E. D. FENNER, nominated by Drs. E. L. Irwin, H. E. Bernadas and H. Theodore Simon.

DR. I. M. GAGE, nominated by Drs. John A. Lanford, H. Theodore Simon and Paul J. Gelpi.

DR. LOUIS LEVY, nominated by Drs. Paul J. Gelpi, Homer Dupuy and Daniel N. Silverman.

The Committee on Periodic Health Examinations is actively engaged in making plans for the annual "Longer Life Week," December 2-8, inclusive. The Committee is sending speakers before the local universities; high schools, public and parochial schools, cooperative clubs and luncheon clubs. Posters will be placed in all Canal Street stores, streamers strung in front of all hospitals and cards placed in the street cars. Lantern slides will be shown in the prominent theaters of the city. Publicity has been secured through the press and each day articles on health subjects written by prominent members of the Society will appear in the newspapers. Radio talks will also be made.

TREASURER'S REPORT

October

Actual Book Balance.....	\$1,541.54
Receipts	1,594.15
	<hr/>
	\$3,135.69
Expenditures	\$2,903.19
	<hr/>
Actual Book Balance.....	\$ 232.50

LIBRARIAN'S REPORT.

Eighty-three books were added to the library during October. Of these 2 were received by binding, 21 from the New Orleans Medical and

Surgical Journal and 60 by gift. A notation of new titles of recent date is appended.

The reference work has continued heavy, with many papers in preparation for approaching meetings. We are constantly borrowing books from the large medical libraries and ordering abstracts from the various services. Daily calls for material in books and journals represent all specialties.

NEW BOOKS.

A. M. A.—Council on Medical Education and Hospitals. Report. 1929.

Mueller—The Expert. 1929.

Amer. Soc. of Stomatologists. Proceedings June, 1928—April, 1929.

Medical Blue Book of Wisconsin. 1929.

Central States Pediatric Society. Transactions. v. 3. 1928.

Hawaii Territorial Medical Association. Transactions. v. 4, 1929.

Rockefeller Foundation—Review for 1928. 1929.

Hoffman—San Francisco Cancer Survey. n. d. Milbank Memorial Fund. Report. 1928.

Steindler—Disease and Deformities of the Spine and Thorax. 1929.

Forrester-Brown—Diagnosis and Treatment of Deformities in Infancy and Childhood. 1929.

Willis—Laboratory Diagnosis and Experimental Methods in Tuberculosis. 1928.

Watson—Fundamentals of the Art of Surgery. 1927.

American Otological Society—Otosclerosis. 2v. 1929.

Bertwhistle—Surgical Radiology. 1929.

Quigley—Conquest of Cancer by Radium and Other Methods. 1929.

Robert Jones Birthday Volume. 1928.

Wiggers—Principles and Practices of Electrocardiography. 1929.

Parsonnet—Hyman—Applied Electrocardiography. 1929.

Abel—Oesophageal Obstruction. 1929.

Barwell—Diseases of the Larynx. 1928.

Fifth Avenue Hospital Clinics. 1927.

Arnau—L'hygiène de l'attention. 1928.

Osborne—What Everyone Ought to Know. 1929.

Beaumont—Experiments and Observations on the Gastric Juice; with biographical sketch of William Beaumont, by Sir William Osler. 1929.

Deaver—Surgical Anatomy of the Human Body. 2d ed., v. 3. 1927.

Dorland—American Illustrated Medical Dictionary. 1929.

Slade—Physical Examination and Diagnostic Anatomy. 1929.

Thomson—Tuberculosis. 1928.

H. THEODORE SIMON, M. D.

Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

MEETING OF ST. TAMMANY PARISH MEDICAL SOCIETY.

The Doctors met in regular monthly meeting November 8, at 8 P. M., at Slidell, in the Community House. Those present were: Drs. F. F. Young, L. Roland Young and W. L. Stevenson, of Covington; Drs. Laurence R. Young and R. B. Paine, of Mandeville, and Drs. Jno. K. Griffith, F. R. Singleton, and A. F. Polk, of Slidell. Dr. Jules Dupuy, of New Orleans, in charge of section of ophthalmology of Charity Hospital, was a specially invited guest and entertained with a lecture on glaucoma. The Doctor sketched the anatomical features by drawings. This proved most interesting and many questions were asked and some discussion followed. It was moved and carried that the December meeting be held in Covington, at which time the regular election of officers for the ensuing year will be held.

L. ROLAND YOUNG, M. D.,
Pres. and Acting Sec.-Treas.

Resolutions on the Death of
Dr. Harold E. Carney, from
Ouachita Parish Medical Society, Monroe.

Whereas, it has pleased the Almighty, on November 6, 1929, to remove from our midst one of the most beloved and highly respected of our physicians, esteemed friend and citizen, Dr. Harold E. Carney;

Whereas, in the untimely and sudden death of our beloved colleague, the medical fraternity, Ouachita Parish, Louisiana, and country at large, sustain the loss of a man whose loyalty to all classes and creeds was unswerving, the loss of a man who towered high in the esteem of those whose privilege it was to know him;

Resolved, that the Ouachita Parish Medical Society, individually and collectively, whose privilege and honor it has been to enjoy the affiliation and cooperation of so valuable a member, wishes to chronicle the death of the brother-physician, whose life has been an unbroken chain of charitable performances, and whose deeds of professional ethics and kindnesses all serve as a beacon of light to posterity. Therefore, be it further

Resolved, that we extend the society's sincerest condolences to his sorrowing widow and family, and that a copy of these resolutions be sent to them, the State Medical Journal for publication

and a copy spread on our minutes as a permanent record.

Dr. P. L. Perot, President;
Dr. E. R. Yancey, Secretary;
Drs. J. H. Pankey, J. E. Walsworth and
J. T. French, Committee.

Resolutions on the death of Dr. Marvin Cappel from the Rapides Parish Medical Society.



MARVIN CAPPEL, M. D.

Whereas, It has pleased Almighty God, in his infinite wisdom, to remove from his sphere of usefulness on this earth, one of the beloved and honored members of this Society, our friend and professional brother, Dr. Marvin Cappel, who met his untimely death in the full vigor of manhood, and

Whereas, his record as a citizen, a physician and a brave and courageous soldier, is above reproach, and is worthy of the emulation of any young man. His untimely death is not only a great loss to the medical profession, but to the community at large; be it therefore,

Resolved, by the Rapides Parish Medical Society, that we deeply deplore the death of our revered member and extend our heartfelt condolence

to his bereaved family in the great affliction they have been called upon to bear.

Resolved, That a copy of this resolution be spread upon the minutes of this society, that a copy be sent to the grief-stricken family, a copy to the Journal of the Louisiana State Medical Society, and the same furnished to the daily press for publication.

M. H. Foster, M. D., President;
H. A. White, M. D., Secretary;
R. O. Simmons, M. D.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about Three Hundred Dollars, will be made on July 14, 1930, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered.

An essay intended for competition may be upon any subject in medicine, but must be accompanied by a written assurance from the author that it has not appeared previously in print, either in

whole or in part, in any form, and has not been presented elsewhere in competition for a prize. The essay should represent an addition to the knowledge and understanding of the subject based either upon original or literary research. It must be typewritten, and in English acceptable for publication without necessity for editing by the committee. Any illustrations should be appropriate and correctly annotated with the text. Essays must be received by the Secretary of the College on or before May 1, 1930.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College; and that it may be published by the author with the consent of the College; other essays will be returned upon application within three months after the award.

The Alvenaga Prize for 1929 has been awarded to Dr. George M. Dorrance, Philadelphia, Pa., for his Essay entitled: "Congenital Insufficiency of the Palate."

JOHN H. GIRVIN, Secretary,
19 South 22d St., Philadelphia, Pa., U. S. A.

The Fourteenth Annual Clinical Session of the American College of Physicians will be held at Minneapolis, Minn., February 10-14, 1930. Headquarters, Minneapolis Municipal Auditorium. Hotels: Curtis, Leamington, Radisson, Sheridan and others.

Watch monthly announcements in "Annals of Internal Medicine." John H. Musser, M. D., President, New Orleans, La.; S. Marx White, M. D., General Chairman, Minneapolis, Minn.

E. R. LOVELAND, Executive Secretary,
133-135 S. 36th St., Philadelphia, Pa.

FIFTH INTERNATIONAL CONGRESS OF PHYSIOTHERAPY.

Liege, September 4 to 8, 1930.

The organization of this Congress is progressing rapidly and we would draw the attention of physicians to the real union which will take place in Liege on the occasion of the International Exposition and the Centenary of Independence.

Acceptances may be sent from now on to Dr. Dubois-Trepagne, Secretary-General, 25 Louvrex Street, Liege, Belgium, with the dues of 130 Belgian francs. This will facilitate the organization of a Congress which will be noteworthy among the sessions of 1930.

UNITED STATES PUBLIC HEALTH SERVICE

Surgeon (R) O. E. Denny. Directed to proceed from Carville, La., to Miami, Fla., and return for the purpose of attending the Joint Meeting of the Southern Medical Association and the American Society of Tropical Medicine, on November 20.

Sanitary Engineer W. H. W. Komp. Relieved from duty at Albany, Ga., and assigned to duty at Greenwood, Miss., stopping en route at Montgomery, Ala., for the purpose of attending the Tenth Annual State Conference of County Health Officers, October 14-16.

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations:

Senior Medical Officer (Internal Medicine) \$4,600 a year.

Junior Medical Officer (Interne) \$2,000 a year

Applications for senior medical officer (internal medicine) and junior medical officer (interne) must be on file with the Secretary of the Fourth U. S. Civil Service District, Washington, D. C., not later than December 26.

The examinations are to fill vacancies in Saint Elizabeth's Hospital, Washington, D. C., and vacancies occurring in positions requiring similar qualifications.

The entrance salaries are \$4,600 a year for the senior grade and \$2,000 a year for the junior grade. Higher-salaried positions are filled through promotion.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information may be obtained from the Fourth U. S. Civil Service District, Washington, D. C., or the Secretary of the United States Civil Service Board of Examiners at the post office or custom-house in any city.

WEEKLY HEALTH INDEX

During the week ending October 12, the death rate in the City of New Orleans was 16.9, 139 deaths during the week. During the corresponding week of 1928 the rate was 17.2, 141 deaths. For the week ending October 19 the rate was practically the same, namely, 16.8, compared with 15.1 of the previous year. The rate rose in the week of October 26 to 18.4, 151 deaths, an increase over the death rate of 14.6 of 1928 with 120 deaths. During each of these weeks the mortality under 1 year has ranged between 10 and 16. The week of November 2 shows an increase also, to 18.9 with 155 deaths, compared with 19.1 and 157 deaths of 1928.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

The Field Memorial Hospital will act as host for the next meeting of the Homochitto Medical Society on January 9, 1930

W. Hamilton Crawford of Hattiesburg, President of the newly organized Mississippi Hospital Association, furnishes the following:

"Mississippi has now been added to the ranks of the organized hospital groups following the Jackson Assembly on October 23. We were very elated over the interest that was shown by the hospital executives throughout the State. It proved conclusively that this organization was very timely and that our people are ready to cooperate to the mutual advantage of the institutions and of the public.

"We had an institutional representation of some twenty-odd with a total attendance amounting to thirty-five. Thinking in terms of the usual association this appears exceedingly few, but by way of comparison we are forced to accept opinion previously advanced earlier in these few remarks. By way of example we turn to two of our neighboring States, Florida and Louisiana. The former had its beginning with representatives from only twelve hospitals and the latter, now having been in existence four years, has an institution membership of fourteen. This statement is not made to cast any reflection on our neighbors, as they have set quite a standard for us to attain, but merely to emphasize the agreed readiness of Mississippi for this organization.

"The association, under the leadership of its officers, who are: W. Hamilton Crawford, Hattiesburg, President; Wayne Allison, Jackson, Vice-President; Dr. J. K. Avent, Grenada, Secretary-Treasurer; Miss Mary H. Trigg, Greenwood; Dr. S. H. Hairston, Meridian; Dr. W. H. Sutherland, Boonville; Dr. H. N. Mayes, New Albany; Dr. B. B. Martin, Vicksburg; Miss Grace Moss, Gulfport; Board of Directors, and its various committees, are now endeavoring to complete certain details preparatory to a definite program that the Association has adopted for this term.

"There are unlimited reasons which speak for the need of an organization such as this. Legislation is desirous along certain lines, a multiplicity of institutional problems, which to obtain the most efficient solution, require group decision, a thorough survey of our hospitals is in demand, the group protection idea is advantageous, and countless other requirements which,

when made an actuality, shall doubtless prove the right for the organization's existence.

"The professional men and women over the State who are not active with institutions are invited to apply for membership within our ranks. You are entitled to an associate membership. Why not use this privilege? You may be certain to find it advantageous.

"It was our honor to have with us two men of national prominence—Dr. Bert W. Caldwell, Executive Secretary of the American Hospital Association. Aside from his delightful address, this magnetic individual rose to the occasion on numerous instances, relieving what on the surface seemed to be an intricate problem.

"On the subject, 'The Workman's Compensation Law and Its Effect Upon the Hospital,' Dr. Louis Bristow of the Baptist Hospital, New Orleans, spoke in a most informative manner. As we Mississippians are particularly interested in this question at present, of course we are glad to obtain the 'good and bad' of such legislation. Dr. Bristow, being President of the Louisiana Hospital Association, and a man of wide experience, also aided the cause quite regularly.

"We were disappointed in the inability of Mr. E. S. Gilmore of the Wesley Memorial Hospital, Chicago, and Mr. J. B. Franklin, Superintendent of the Georgia Baptist Hospital, Atlanta, in not being able to attend. There remains open for them this invitation, which we hope that they shall accept at the coming session in February.

"Our sessions, which will meet annually in the city of Jackson, Mississippi, on the second Tuesday in February, at the Edwards Hotel, are open, and we extend to each of you a personal invitation to assemble with us at that time."

President Crawford, who is business manager of the South Mississippi Infirmary at Hattiesburg, deserves much credit for bringing about in Mississippi this much-needed organization.

At the last meeting of the Staff of the Chamberlain-Rice Hospital, Natchez, the following reports and discussions were presented:

1. The Advantages of Spinal Anaesthesia in Pelvic Surgery, with case report and summary of advantages including elimination of respiratory irritation; more complete relaxation with auto-retraction of intestines, thus shortening time of

operation; and elimination of post-operative nausea and vomiting.—Dr. C. T. Chamberlain.

2. The Differentiation of Hyperthyroidism with Afternoon Fever, and Early Tuberculosis, with case report.—Dr. J. G. Logan.

3. A Review of Recent Nephrectomies, with reports of Hemorrhagic Pyelonephrosis, Staphylococcal Infection; Pyelonephrosis Due to Calculi, B. Coli Infection; and Streptococcal Kidney with Multiple Abscess.—Dr. James C. Rice.

4. Atelectasis in the Newborn, with report of case in which H-H Inhalator was used.—Dr. James C. Rice.

Dr. Raymond T. Smith, Natchez, and wife, have returned from a month's vacation in Chicago, where Dr. Smith attended the recent sessions of the American College of Surgeons.

Dr. Eugene A. Trudeau, Biloxi, furnishes the following:

"The doctors of Jackson County were invited to attend the September meeting of the Biloxi Hospital Staff. Those who were able to accept invitations were Drs. Powell, McIlwain, Ratcliff and Landry. A dinner was served by the hospital authorities, assisted by several members of the Ladies' Auxiliary.

The following case reports were presented and discussed:

1. Acute Nephritis.—Dr. J. T. Weeks.

2. Acute Yellow Atrophy of Liver, Following the Administration of Neosalvarsan.—Dr. B. Z. Welch.

3. Severe Jaundice Following Administration of Neosalvarsan.—Dr. B. Z. Welch.

4. Idiopathic Pneumothorax.—Dr. G. W. Wallace.

5. Tuberculosis of the Appendix.—Dr. G. F. Carroll.

6. Left Pyosalpinx with Concurrent Ruptured Tubal Pregnancy of Right Side.—Dr. G. F. Carroll.

7. Endothelioma of the Glands of the Neck; Radical Operation.—Dr. J. E. Wallace.

8. Discussion of and Presentation of a neglected Child with Advanced Rickets and Tetany.—Dr. E. A. Trudeau.

At the October meeting of the Staff of the Biloxi Hospital, in addition to the usual program, Drs. Powell and Bailey of Ocean Springs were elected members of the Hospital Staff, and Drs. McIlwain, Landry, Lockard, and Kell of Pascagoula, Drs. Eley, Rape, and McArthur of Moss Point, and Dr. Ratcliff of Vancleave were elected honorary members.

Dr. I. W. Cooper, Meridian, furnishes the following in regard to medical affairs in the Eastern part of the State:

"Dr. Walter R. Holliday, of Meridian, has been confined to his bed suffering with malaria.

"Dr. and Mrs. A. G. Touchstone have returned from a two weeks' stay in Chicago, where Dr. Touchstone took post-graduate work in his specialty, Ear, Eye, Nose and Throat.

"Dr. and Mrs. S. H. Hairston have returned from Chicago, Illinois, and Rochester, Minnesota. Dr. Hairston attended the meeting of the American College of Surgeons in Chicago, and from there he visited the Mayo Clinic in Rochester.

"Dr. H. L. Rush left November 3 for Rochester, Minn., where he spent several days at the Mayo Clinic. From there he goes to Philadelphia and New York for post-graduate work in other hospitals.

"Dr. G. L. Arrington left October 1 for St. Louis, where he is specializing in diseases of children. He expects to take up this specialty in Meridian as soon as this course is completed.

"Rapid strides are being made on the Children Clinic building being erected by Dr. R. G. Riley. This is going to be a magnificent building and will be modern and complete in every respect.

"The Lauderdale County Health Unit, under the able direction of Dr. J. T. Googe, is doing a wonderful work in the City of Meridian and Lauderdale County in disease prevention. People are realizing more every day what these Health Units mean to a community.

"A large number of Meridian physicians attended the meeting of the Southern Medical Association, which met in Miami, Florida, on November 19, through November 22.

"The next meeting of the East Mississippi County Medical Society will be held in Meridian in December, at which time officers for the ensuing year will be elected. It is hoped that we will have a large attendance.

"The October Staff Meeting of the Meridian Sanatorium was held at 7 P. M. October 10. An elegant dinner was served by the hospital and the Staff Meeting at this time was practically a symposium on fractures. Dr. Hairston reported several cases which were fully recovered. He also discussed spinal anesthesia."

Dr. H. H. Ramsay, Superintendent of the Mississippi School and Colony for the Feebleminded at Ellisville, writes as follows: The Legislature of 1928 gave us a \$500,000.00 building program which is now nearing completion. This program consists of two new fireproof standard dormitories, one nursery building, service building, school building, power plant, laundry, and a small employees' building. This program also includes a deep well, water system and sewer system, and a small cheap farm unit.

Only high grade imbeciles and morons of school age will be kept in the new buildings, and will be sent to school and given such training as is adapted to their capacity, whether it be in the literary field, manual training or hand trades of any sort. For this work we now have three well trained teachers, skilled in the teaching of defectives.

For the lower grades of school age children, and higher grade boys who are past school age, we are building a farm unit and they will be placed there and given training along these lines.

Dr. B. G. Barentine, Laurel, was married on October 31 to Miss Hazel Lockhart Green, at Orangeburg, South Carolina. They are now at home with Mr. and Mrs. Wilson Buckley at Laurel.

Dr. T. J. Brown, Grenada, reports the following in regard to the Eighty-third Birthday Anni-

versary of Dr. Young, a former President of the Mississippi State Medical Association, in order that Dr. Young's friends throughout the State might know that he was able to attend and enter heartily into all of the festivities of the occasion.

"On Monday, October 28, Dr. J. S. Sharp, of Grenada, gave a six o'clock dinner in honor of Dr. J. W. Young of that city, who passed his eighty-third birthday the day before.

"All the physicians of Grenada County together with three of the nearest neighbor physicians of Montgomery county were invited. Dr. and Mrs. Sharp were assisted in receiving their guests by Mrs. B. S. Dudley and Miss Lynn Dunnavent. The house was artistically decorated with Confederate flags and the Confederate emblems and colors prevailed throughout. The elaborate five course dinner was faultlessly served and a royal good time was enjoyed by all present. Dr. R. A. Clanton very happily acted as toast master and was most felicitous in introducing the speakers. Dr. Sharp paid a beautiful tribute to Dr. Young as patriot, soldier, citizen, physician and churchman.

Appropriate talks, commendatory of Dr. Young's exemplary life and character were made by Drs. G. Y. Gillespie, S. S. Caruthers, J. K. Avant, W. H. Whitaker and the writer.

Rev. R. L. McLeod and Mr. R. W. Sharp made short addresses. To all these Dr. Young very feelingly and touchingly responded.

Such pleasure was had by all that it was unanimously voted to make the function an annual affair. Dr. and Mrs. Sharp were such charming hosts that all were loathe to bid adieu.

In full possession of his mental and moral faculties, Dr. Young approaches the sunset. Conscious of a noble, well spent life, firmly established in the esteem of his fellow physicians and the public, triumphant in his Faith for the future he calmly and serenely awaits the evening shadows.'

The Northeast Mississippi Medical Society will hold its last meeting of the year in December at Tupelo.

The following is from the Mississippi State Hospital at Jackson:

"Dr. R. C. O'Farrall has been added to the medical staff of the Mississippi State Hospital.

"Dr. Geherls, a young lady medical student, is doing efficient work here helping members of the staff with their work.

"During the month of October there were 101 patients brought into the Hospital Clinic.

"The Medical Staff holds a clinic each morning from 8 to 10, except Sundays. Visiting physicians always welcome.

"Dr. W. E. Clark, Assistant Superintendent and Medical Director and Mrs. Bass, the Welfare Worker for the Hospital, attended the Mississippi Welfare Conference at University during the month of October, at which time Dr. Clark read a paper on 'The Service of a Psychiatrist in Welfare Work.'"

Dr. Roland Cranford's Hospital at Laurel has been recently overhauled and twelve additional rooms added.

Dr. R. W. Hall, Secretary of the Central Medical Society, reports that the Regular Monthly Meeting of the Central Medical Society was held on November 12, at the City Auditorium, Jackson, instead of at the regular meeting time. This change was made because of the Annual Meeting of the Southern Medical Association, which was attended by a number of the members of the Society.

The unusually instructive scientific program provided included the following:

1. Galvanism—Dr. J. E. McDill, Jackson.
2. The Significance of Convulsions in Children—Dr. R. C. Basinger, Jackson.
3. Hyperemesis Gravidarum—Dr. O. Simmons, Jackson.
4. The Acute Gall-bladder—Dr. E. G. Galloway, Jackson.

We are in receipt of two most interesting reprints from Dr. V. B. Philpot, of Houston. These are the President's Address before the Tri-State Medical Association at Memphis last February, when Dr. Philpot was President, and a paper on Cesarean Section. Both are well written and contain much food for thought.

The first organized meeting of the staff of the McComb Infirmary was held in the parlors of that institution on October 17, 1929. The meeting was called to order by the President, Dr. S. Paul Klotz. The work of the hospital for the past few months was reviewed and discussed by the different members of the staff and resolutions for better work and for better histories were adopted. It was brought out that there had been treated in the hospital since May 20, three cases of rupture of the spleen.

MISSISSIPPI MORTALITY STATISTICS, 1928

The Department of Commerce at Washington has announced that the death rate for Mississippi in 1928 was greater than in 1927, being 1,445.6 per 100,000 population for 1928 as compared with 1,295.8 in 1927.

Increases in death rates were from the following principal causes: Diseases of the heart, nephritis, cerebral hemorrhage and softening, tuberculosis, cancer, diabetes mellitus. Increases were shown also for influenza, pneumonia, congenital malformations and diseases of early infancy, diseases of the arteries, atheroma, etc., hernia, intestinal obstruction, measles, malaria, meningococcus meningitides, and pellagra.

The death rate from accidental falls, from burns, conflagrations excepted, and from automobile accidents, excluding collisions with railroad trains and street cars, also showed an increase.

Among those diseases showing a decrease in death rate were whooping cough, typhoid and paratyphoid fevers, diphtheria, appendicitis, syphilis, and cirrhosis of the liver.

The death rate from all accidental causes decreased from 83.0 to 77.2, the greatest decrease being for accidental drowning (14.4 to 6.6).

There is reason to feel considerable satisfaction in the decreased death rates shown for they are mostly in those diseases where prevention is practicable or early good treatment will accomplish much. However, if our mortality in appendicitis follows reports from other parts of the country this year, we shall do well if we again show a decrease in deaths from that disease. The increased rates shown in a number of common diseases should be a stimulus to great effort for a better showing this year.

AN INVITATION.

ANNUAL MEETING ISSAQUENA-SHARKEY-
WARREN COUNTIES MEDICAL SOCIETY
TUESDAY, DECEMBER 10, 1929, 7:30 P. M.
Y. M. C. A.—VICKSBURG.

PROGRAM.

The Cause and Treatment of Arterial Hypertension—Dr. James S. McLester, Birmingham.

A Discussion of Some of the Newer Remedies and Methods of Treatment for Malaria—Dr. C. C. Bass, New Orleans.

Banquet at 7:30 P. M.—promptly.

Every officer and member of the Mississippi State Medical Association and of the Louisiana State Medical Society is cordially invited to be our guest on this occasion. Please send a card to the Secretary, Leon S. Lippincott, M. D., Box 303, Vicksburg, Miss., so that a plate may be reserved for you. We shall be glad to meet you on arrival.

Last year we had eighty-five doctors from four states. This year we are expecting one hundred and fifty.

Acknowledgement is made of the receipt of the following reprints: Teaching the Diabetic Now to Live, Seale Harris, M. D., Birmingham, Ala.; General Considerations in the Treatment of Syphilis, Seale Harris, Jr., M. D., Birmingham, Ala.; and Roentgenological Manifestations of Peptic Ulcer, J. P. Chapman, M. D., Birmingham, Ala.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held on November 12, at Vicksburg. The following scientific program was presented:

1. Treatment of Pneumonia. Dr. D. A. Pettit. Discussed by Drs. W. H. Scudder, Mayersville; L. J. Clark, Vicksburg; G. M. Street, Vicksburg; R. H. Foster, Mound, La.; L. S. Lippincott, Vicksburg; H. W. Weimar, Vicksburg; G. W. Gaines, Tallulah, La. Dr. Pettit closed.

2. Sodium Iodide Intravenously in the Treatment of Orchitis. Dr. W. C. Pool, Cary. (Read by Secretary in absence of Dr. Pool.) Discussed by Drs. A. Street, Vicksburg; D. A. Pettit, Vicksburg; J. A. K. Birchett, Jr., Vicksburg; S. W. Johnston, Vicksburg; H. H. Johnston, Vicksburg.

3. The County Health Officer and the Practice of Medicine. Dr. W. H. Scudder, Mayersville. Discussed by Drs. A. Street, Vicksburg; R. H. Foster, Mound, La.; S. W. Johnston, Vicksburg; G. W. Gaines, Tallulah, La.; H. S. Goodman, Cary; E. H. Jones, Vicksburg. Dr. Scudder closed.

4. Lumbago,—Diagnosis and Treatment. Dr. H. W. Weimar, Vicksburg. Discussed by Drs. A. Street, Scudder, Birchett, Jr. Dr. Weimar closed.

Dr. Edwin Press Hall of Vicksburg was elected to membership.

It was announced that Drs. I. C. Knox, L. J. Clark, and P. S. Herring had been invited to present papers before the medical section of the Mississippi State Medical Association at its next meeting in Vicksburg.

Plans for the annual meeting and banquet on December 10 were discussed.

At the regular monthly meeting of the Staff of the Vicksburg Sanitarium, the following special case reports were presented and discussed:

1. Localized Inflammation of the Lower Ileum Simulating Appendicitis. Dr. G. M. Street.

2. Carcinoma of the Stomach; Billroth II Operation in Two Stages. Dr. A. Street.

3. Septicemia, Origin Undetermined. Dr. L. J. Clark.

4. Rupture of the Urinary Bladder from Muscular Strain. Dr. H. H. Johnston.

Dr. J. A. K. Birchett, Jr., made a report of the recent meeting of the Interstate Post Graduate Medical Association of North America, at Detroit.

The following interesting radiographic studies were presented and discussed: Renal calculus (3 cases); double ureter; maxillary sinusitis (2 cases); atrophy and absorption of second lumbar vertebra; hypertrophic osteo-arthritis of knee and spine; enlarged thymus; cholelithiasis.

The regular monthly meeting of the Staff of the Vicksburg Hospital was held on November 7. A number of interesting case reports were presented. Dr. H. W. Weimar, Vicksburg, was elected to membership.

S. O. S.

A measure to safeguard the sale of lye and similar caustics will be introduced at the next session of the Legislature. This bill has already failed of passage twice. It must not happen again.

Every member of the Mississippi State Medical Association has been appointed a committee of one to interview his Senators and Representatives and inform them of the necessity for action.

Those of you who saw the case presented by Dr. Montgomery of Greenville at Gulfport last Spring ought to realize what it means to be burned by lye. You should tell those who didn't see it. If this bill doesn't pass and you have failed to do your share, you must not complain should your neighbor's child, or your own, get into the same fix as Dr. Montgomery's patient.

BOOK REVIEWS

Gynecology: By Lynn Lyle Fulkenson, A. B., M. O., F. A. C. S. Philadelphia. P. Blakiston's Son & Co., 1929. Pp. 842

This new work on Gynecology considers the usual diseases and conditions falling under this heading, with considerable attention to the genito-urinary tract (almost one-fifth of the book) and to the rectum and anus. The author is, on the whole, conservative and sound in his judgment. The various measures advocated for the management of the conditions encountered by the gynecologist are in accordance with modern gynecological teachings and are generally accepted as correct.

It appears to the reviewer that the author is unduly optimistic regarding endocrine therapy, especially as regards the mammary gland, placental substance, ovarian and corpus luteum preparations. For example, extracts of corpus luteum is recommended for vomiting of pregnancy, although there is considerable evidence that it is of little or no value in the treatment of this condition. Incidentally, it might be noted that the chapter on Physiology includes the endocrine glands, menstruation and its disorders (including treatment of same), ovulation, fertilization, with a few notes on pregnancy and labor. It would appear that subdivision into two chapters would be more suitable.

Some apparent errors and some loose constructions are noted. On page 157 we find "the diagnosis must be based upon the finding of the gonococcus in the smear made from the secretion with the microscope." On page 297 appears this statement, "in discussing the treatment of carcinoma of the ovary: laparotomy with oophorectomy is indicated. If malignancy of one side is fairly certain as shown by immediate examination of the frozen section, the second ovary should also be resected." Does he not mean "excised?" On page 459 credit for first bringing radium to the attention of the medical profession is given to "Dr. Curre." Does he not mean Prof. Curie? Our old friend "acute abdomen" appears on page 291 and we also find "costiveness," "virgin state" and "puberty patient." Commas also have a way of creeping in, where they have no business.

There are 612 illustrations most of which are very good. However, in figures 396-397-398, illustrating supravaginal hysterectomy, the attachment of the tube and round ligament are placed much too low upon the lateral wall of the uterus. The correct insertions are shown in figures 432-433, drawn by the same artist.

On the whole, it can be said that this is a very "readable" book, giving the essentials of the sub-

ject, plainly and concisely. It is an accurate and up-to-date mirror of modern gynecology. While it is not a revolutionary work, it should be useful for ready reference, particularly to those who find it impossible to keep up with current gynecological literature.

E. L. KING, M. D.

Manual of Disease of Nose, Throat and Ear: By E. B. Gleason, M. D., LL. D. 6th Ed. Rev. Philadelphia, W. B. Saunders Co., 1929. Pp. 617.

This little book is of a very convenient size to hold in the hand for study, but in spite of its small size contains an immense amount of information.

Formulas in the back of the book will be found useful.

Illustrations are good.

Operative technic is well covered except in the field of bronchoscopy which is really a specialty apart from oto-rhino-laryngology.

The field of otology is particularly well covered.

The book will be found useful to the advanced practitioner of the specialty as well as to the beginner. It will have a special appeal to those in general practice.

H. KEARNEY, M. D.

Surgical Radiology: By A. P. Bertwistle, M. B., Ch. B., F. R. C. S. Ed. Philadelphia; P. Blakiston's Son & Co., 1929. Pp. 142.

The relation of Radiology to Surgery is clearly brought out by the author in his book. Nothing new is advanced in so far as radiology is concerned, but on the whole this small book constitutes a source of radiologic diagnostic information of interest to the general practitioner and the surgeon in particular.

The author has brought forward a very important fact, namely that radiological diagnosis in most instances should bear a close relationship to careful clinical observations and also that any effort to co-ordinate and correlate clinical facts with radiological findings is worthy of encouragement.

This book is written from the surgeon's viewpoint, as the author is not a radiologist. However, he has incorporated a brief review of the modern radiological literature which is of interest to the medical profession in general.

LEON J. MENVILLE, M. D.

The Fifth Avenue Hospital Clinics, New York City. Paul B. Hoeber, Inc., 1927. Pp. 336.

This is a very creditable collection of papers selected from the semi-monthly staff meetings of the Fifth Avenue Hospital in New York. They give testimony of the very high class of clinical and research work done in this hospital. The articles are well written and the book itself comes up to the usual high standard of the publications of Paul B. Hoeber, Inc.

Particular mention may be made on the articles on Hernia, Pulmonary Tuberculosis, General and Intraspinal Anesthesia, the Thyroid Gland and Diabetes.

It is well worthy the perusal of anyone doing clinical medicine or clinical surgery, and would lend itself to use as a model to be followed by any up-to-date hospital in the conduct of its staff meetings.

JOSEPH A. DANNA, M. D.

Tweedy's Practical Obstetrics: Ed. and largely rewritten by Bethel Solomons, M. D., F. R. C. P. I., M. R. I. A. 6th Ed. Lond. Oxford Univ., Pr. 1929. Pp. 759.

This is a most excellent revision of a most excellent work. Written by Tweedy when he was Master of the Rotunda Hospital in Dublin, and revised by the present Master, Bethel Solomons, it constitutes an exposition of the methods and procedures employed in that admirable institution, and sets forth the mature obstetrical judgment of the authors, based on their collective experience with thousands of maternity patients. Methods employed elsewhere which are at variance with those favored in the Rotunda are briefly mentioned, chiefly in order that the advantages (as they see them) of their own procedures may be emphasized. Details are carefully and concisely set forth, so that in every way the work merits the little "Practical Obstetrics."

The book is written in the admirable English, so characteristic of text-books and journals emanating from the British Isles. (We in America are in need of much improvement in this respect). The illustrations are well chosen, simple and easy to understand. The mechanical treatment at the hands of printers and publishers leaves nothing to be desired.

In short, this work can be highly recommended as a most satisfactory presentation of the experience of the Rotunda Hospital, and as an excellent interesting treatise on the subject of obstetrics.

E. L. KING, M. D.

Surgical Anatomy of the Human Body: V. 3. By John B. Deaver, M. D., SC. D., LL. D., F. A. C. S. Philadelphia, Pa., P. Blakiston's Son & Co., 1927. Pp. 761.

This volume, like the others which have preceded it, is quite an improvement on the previous edition, which, itself, was a masterpiece of the printer's art, and probably the best written and most comprehensive book on the subject at the time.

Much of the material has been re-written and many additions to the text made, in keeping with the progress of the science and art of surgery.

It is such a wonderful work that one finds it difficult to point to any particular feature as being more especially worthy of note than another. It is a book which should be in every library and in the hands of every man doing surgery. The only thought which occurs in reviewing the book is the possibility of improving it by the use of colored plates.

JOSEPH A. DANNA, M. D.

The Robert Jones Birthday Volume: A Collection of Surgical Essays. London, Oxford Univ. Press, 1928. Pp. 434.

The preface to the volume is contributed by Lord Berkeley Moynihan. It is an essay of rare beauty such as few men could write. His picture of Sir Robert Jones brings to those who have not had the opportunity of personal contact with the great genius an impression of the nobility of the character of the subject.

Lord Moynihan says "Spirit alone is immortal. In the practice of orthopedic surgery the spirit of Robert Jones will live forever. Our affection for him transcends, if it be possible, our gratitude for his professional worthiness."

"All those who contributed to this volume are proud to think that the influence of Robert Jones, of his methods, and of his teaching has inspired them, has found a place in their work to be transmitted by them in due time to their successors."

In another portion of the preface he says: "The opportunity to pay tribute—gave us the chance to say openly what has long been in our hearts, in regard to his work for our profession, and in acknowledgement of the inspiration, encouragement, and example he has given to all who have had the high privilege of association with him.

Robert Jones may well be called the chief among the modern "Menders of the Maimed."

It would be difficult to review each chapter of this work. The names of some of the contribu-

tors is sufficient guarantee of the character of the work, Little, Jansen, Hey Groves, Starr, Calve, Putti, Sir John Lynn-Thomas and many others. More useful information is included in this column than can be brought to the attention by a brief review.

This is not a book, it is an encyclopedia, it is not a literary contribution, it is a compendium of the literature of Bone and Joint Disease. It is the work of surgeons who have attempted and fittingly succeeded in producing a memorial worthy of the master in whose honor it has been compiled. Each chapter is the work of a master paying worthy tribute to one whose influence will always be felt by those having to manage the maimed.

The volume should be widely distributed because it has an appeal to surgeons, pediatricists, anatomists, physiologists, radiologists, as well as to orthopedists. To appreciate the value of it the reader should have it on hand for ready reference. It is such a volume as may be profitably read and portions reread as the immediate demand of the student in this field finds need for information.

Those who have sponsored the work have paid a fitting tribute to a master. Let those who would honor their own leader pay a tribute in like manner, and in so doing honor themselves.

ISIDORE COHN, M. D.

Memoranda of Toxicology: By Max Trumper, B. S., A. M., Ph. D. Philadelphia. Blainston's Son & Co., Inc., 1929. Pp. 214.

A small book of pocket size which discusses the symptomatology and the treatment of various types of poisonings. While the so-called practical details are invariably brought out, there is also in many instances a very excellent discussion of the chemistry, pharmacology and physiology of these toxic drugs and preparations.

J. H. MUSSER, M. D.

L'hygiène de l'attention par la méthode d'autorégulation consciente: By R. Ruiz Arnau, Paris, Gaston Doin, 1928, Illus. Pp. 292.

This is a French translation from the original Spanish text.

This work is the product of sustained research and observations by the author on the method of conscious self-regulation as applied to the all important function of attention.

In the first part of the book the author describes the process of attention and its resulting reactions, whether psychic or motor, as rhythmic

in character, just as sight and hearing result from vibratory changes.

Two forms of attention are recognized: spontaneous or natural attention resulting from ordinary or habitual stimuli, response from which takes place without effort on the part of the individual and voluntary or artificial attention resulting from unnatural or uncommon stimuli the response from which demands more or less voluntary effort.

As long as attention remains in the realm of the former no demand is made on the higher psychic functions and the individual remains free from functional troubles. But when it reaches and is held repeatedly in the sphere of the latter functional troubles are apt to follow.

Modern life full of agitations and emotions is the breeding ground of numerous nervous disorders which in spite of their diversity originate from a common source, over exertion, causing a squandering of nervous and mental energy. It is toward the conservation of this nervous and mental energy that Prof. Ruiz Arnau presents in a very clear manner the method of autoregulation based on solidly established psychophysiological principles.

In the second part, the author discusses the application of this method not only as a means of prophylaxis in general but specifically as applied in the preventive treatment of myopia in school children and in athenopia. A chapter is devoted to the revision of the problem of presbyopia.

In the third part, the author considers as indispensable the presentation of certain essential points in order that the reader may appreciate and realize fully the technic of application which is here given in detail. Among these points may be mentioned the frequency of the rhythm of the subconscious, the practical method of utilizing auditory memory, the experimental demonstration of the oscillatory character of voluntary attention.

Then follows a list of over a hundred bibliographical references including authors from leading nationalities. American and French authors, frequently quoted in the text, lead the list.

Our medical and lay publications repeatedly remind us of the possibility of preventing diseased conditions by the proper application of sound hygienic principles. Prof. Ruiz Arnau by the clearness and originality of the principles expounded in this single volume has given us a worthy and valuable contribution towards the proper methods to be used for the regulation and the hygiene of attention. The practice of these methods are very good though they may necessitate frequent repe-

tion. Usefulness alone will follow their employment.

It is the reviewer's opinion that this is a scientific and practical book bound to prove illuminating and of great utility in the hands of the psychiatrist, neurologist, oculist, pedagogue and general practitioner.

L. L. CAZENAVETTE, M. D.

The Health of the Mind: By J. R. Rees, M. A., M. D. Cambridge, Washburn & Thomas, 1929. Pp. 266.

This volume is a short work dealing with the modern psychological approach to the study of the mind, written for the laity. The book smacks strongly of the psycho-analytical school, although the author assures us that he is bound to no particular system of thought. It is well written and the aim to keep it scientifically sound throughout, is evident.

I. L. ROBBINS, M. D.

The History of Nursing: By James J. Walsh, M. D., Ph. D. New York, P. J. Kenedy & Sons, 1929. Pp. 293.

A most excellent historical survey of nursing from the time of primitive Christianity up until the present day. The book is written with the intelligence and the skill that one would expect from such an able writer and historian as Dr. Walsh.

J. H. MUSSER, M. D.

Far Eastern Association of Tropical Medicine. Transactions of the Seventh Congress Held in British India, December, 1927: Edited by J. Cunningham, B. A., M. D., I. M. S., Vol. II. Thacker's Press. Calcutta. 1929. Pp. 867.

This volume of the transactions of the Congress covers the following sections: Plague, cholera, dysentery, sprue and intestinal infections, bacteriophage, leprosy, tuberculosis, bacteriology; typhus-like diseases and leptospirae; protozoology, malaria (general, control and treatment). Without question the most valuable papers in this series comprise those on malaria, including contributions by such eminent authorities as Malcolm Watson, S. P. James, S. R. Christophers, and J. A. Sinton. There are several excellent half-tone plates and many textual illustrations. The volume is a credit both to the contributors and to the publishers.

ERNEST CARROLL FAUST, Ph. D.

A Diabetic Manual: By Elliott P. Joslin, M. D. Philadelphia, Lea & Febiger, 1929. Pp. 248

Four editions in the last ten years indicate the demand that has been made by patients and doctors for this manual of Joslin. It stands today as it did in 1918 as the best single booklet on the care of the diabetic for the mutual use of doctor and patient.

J. H. MUSSER, M. D.

What Everyone Ought to Know: By Oliver T. Osborne, M. D. Springfield, Ill. Charles C. Thomas, 1929. Pp. 313.

An excellent volume particularly prepared for the use of the laity. It is filled with many facts pertaining to medicine and allied subjects. It is sound and well written.

I. L. ROBBINS, M. D.

Experiments and Observations on the Gastric Juice and the Physiology of Digestion: By William Beaumont, M. D., a facsimile of the original edition 1833 together with a biographical essay by Sir William Osler. Cambridge, Harvard Univ., pr. 1929. Pp. 280.

This is a volume containing Beaumont's original articles on the gastric juice and the physiology of digestion. It is an excellent example of the man and the moment well met and the result a decided advance in the progress of medicine. The modesty and honesty of the man; the ingenuity of his experiments even today can only call forth our admiration. There is a biographical essay by Dr. Osler.

I. L. ROBBINS, M. D.

Artificial Sunlight and Its Therapeutic Uses: By Francis Howard Humphris, M. D. 5th Edition. London, Oxford University Press. 1928, pp. 340.

The fact that this work has gone through five editions since its first printing in 1924 attests its popularity. New facts, fresh improvements and artificial light lore accumulate rapidly. The work is conservative. The author does not claim that artificial sunlight is a panacea, but regards it as only one more weapon in the armamentarium of the fully equipped physician.

There are good chapters on Apparatus, Therapeutics, Technique, Dosage, etc. The statement on page 292 concerning the relative emission of infra red and ultra violet by the quartz mercury lamp is based on error. The work may be recommended as an introductory and informative guide to the subject.

HENRY LAURENS, Ph. D.

An Introduction to the Study of Human Anatomy:

By R. J. Terry, A. B., M. D. New York, The Macmillan Co. 1929. pp. xviii + 346.

This laboratory manual of Gross Anatomy serves as a guide for dissection procedure and examination of the living subject, so designed as to develop the full disciplinary value of the study. It aims, further, to orient the student with reference to the history and methods of anatomical investigation and to introduce the fundamentals of human constitution.

Representing as it does the outgrowth of laboratory directions employed through some twenty years at Washington University, issued in mimeographed form and revised from time to time, the manual is a product matured by actual trial. Even considering this fact, however, the literature references appear open to improvement by the substitution of equivalent works in English for the numerous citations in German and French. Regrettable as the truth may be, the average medical students reads only English.

HAROLD CUMMINS, Ph. D.

Diseases of the Larynx, including Those of the Trachea, Large Bronchi and Esophagus: By Harold Barwell, M. B. (Lond.), F. R. C. S. (Eng.) Third Edition. London: Oxford University Press. 1928. Pp. 278.

This little book is a practical manual for the general practitioner and, more particularly, for the student preparing for laryngology as a specialty.

The section on tuberculosis is noteworthy.

Direct examination of the larynx and bronchoscopy and esophagoscopy are described. The author recommends introduction of lipiodol for bronchography through a needle puncturing the crico-thyroid membrane, a procedure which finds little favor in this country.

The book is well illustrated and well written. Typographical errors are conspicuously absent.

H. KEARNEY, M. D.

Some Principles of Minor Surgery: By Zachary Cope, M. S., M. D. (Lond.) F. R. C. S. (Eng.) London, Oxford Univ. Press, 1929. Pp. 159.

In this monograph no attempt is made to deal systematically with the vast subject of minor surgery which is adequately provided for in many recent excellent text-books. Only a few elementary general principles are taken up.

The entire text is clear, concise, authoritative, well written and well illustrated. This is especially true of the chapter on the "Use and abuse of antiseptics" and the "Diagnosis and treatment of infections of the hand."

PAUL G. LACROIX, M. D.

PUBLICATIONS RECEIVED.

Charles C. Thomas, Springfield, Illinois: Manual of External Parasites, by H. E. Ewing, Ph. D.

Lea & Febiger, Philadelphia: Practical Local Anesthesia, by Robert Emmett Farr, M. D., F. A. C. S. Surgical Diseases of the Thyroid Gland, by E. M. Eberts, M. D., with the assistance of R. R. Fitzgerald, M. D. and Philip G. Silver, M. D. Manual of Proctology, by T. Chittenden Hill, Ph. B., M. D., F. A. C. S. Laboratory methods of the United States Army, edited by Charles F. Craig, M. A., M. D.

H. R. Grubb, Ltd., Croydon, England: Insects, Ticks, Mites and Venemous Animals of Medical and Veterinary Importance, Part I—Medical, by Walter Scott Patton, M. B., Ch. B. (Edin.), F. E. S. and Alwen M. Evans, D. Sc.

Harper & Brothers, New York and London: Diseases of the Blood, by Paul W. Clough, M. D.

Funk & Wagnals Company, New York and London: Posture and Hygiene of the Feet, by Philip Lewin, M. D.

Oxford University Press: Gastric and Duodenal Ulcer, by Arthur F. Hurst, M. A., M. D. (Oxon.), F. R. C. P. and Matthew J. Stewart, M. B. (Glasg.) F. R. C. P. Common Infections of the Female Urethra and Cervix, by Frank Kidd, M. A., M. Ch. (Cantab.), F. R. C. S. (England) and A. Malcolm Simpson, B. A., M. B., D. P. H. (Cantab.).

C. V. Mosby Company, St. Louis: An Introduction to the Study of the Nervous System, by E. E. Hewer, D. Sc. (Lond.) and G. M. Sandes, M. B., B. S. (Lond.), M. R. C. S., L. R. C. P. Modern Methods of Treatment, by Logan Clendening, M. D. The Blood Picture and its Clinical Significance, by Professor Dr. Victor Schilling, translated and edited by R. B. H. Gradwohl, M. D. Pettibone's Textbook of Physiological Chemistry, revised and rewritten by J. F. McClendon, Ph. D.

F. A. Davis Company, Philadelphia: Practical Massage and Corrective Exercises with Applied Anatomy, by Hartvig Nissen. Disorders of the Sexual Function in the Male and Female, by Max Huhner, M. D.

W. B. Saunders Company, Philadelphia and London: Affections of the Stomach, by Burrill B. Crohn, M. D. Diseases of the Chest and the Principles of Physical Diagnosis, by George William Norris, A. B., M. D. and Henry R. M. Landis, A. B., M. D., Sc. D.

MacMillan Company, New York: The Newer Knowledge of Nutrition, by E. V. McCollum, Ph. D., Sc. D. and Nina Simmonds, Sc. D. Grenz Ray Therapy, by Gustav Bucky, M. D. The Pathology of the Eye, by Jonas S. Friedenwald, A. M., M. D., F. A. C. S.

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THORACIC PAINS.*

A. E. FOSSIER, M. D.,

NEW ORLEANS.

Paroxysmal thoracic pains are usually diagnosed as angina pectoris. Yet all paroxysmal thoracic pains do not signify angina pectoris. Errors of diagnosis in this respect are most common. Frequently these pains are benign and they may be caused by pathologic factors independent of lesions of the heart and aorta. An unqualified diagnosis of all thoracic pains of the chest is as great an avowal of ignorance as is the diagnosis of functional neurosis and hysteria in cases having a definite though unrecognized underlying pathology.

We will first consider the true angina pectoris. What is it? What is its pathology? These questions are still unanswered. Angina pectoris is a diseased condition having definite symptoms with indeterminate and variant pathology. It is a syndrome and not a disease. Many theories are advanced as to its cause, and whilst they all differ radically, I am of the opinion that they are correct in so far as each may occasionally be correctly considered the pathogenic cause of the angina pectoris.

The following are the five principal theories explaining the pathologic cause of angina pectoris:

- (1) The coronitis theory.
- (2) The aortitis theory.

(3) Cardiac distention. (Merklen's theory)

(4) Myocardial exhaustion. (Mackenzie's theory)

(5) Fatigue of the myocardium. (Danielopolu theory)

A narrowing or an obliteration of the lumen of the coronary artery resulting from a coronitis or from an aortitis spreading to the orifices of the coronary arteries, with concomitant myocardial ischemia causing an alteration in the muscles of the heart especially at its apex and at its septum, is conceded to be the most frequent cause of angina. In the largest majority of cases this pathology is found in autopsies.

It is thought that the resulting ischemia causes pain either by the accumulation of toxic substances in the myocardium, or by the distention of a weakened heart muscle. The underlying pathology is usually a fibrosis or a sclerosis, a thrombosis or embolism of the coronary arteries. Obendorfer concluded from observations made on fourteen cadavers that in the majority of these patients who died of angina pectoris, there was a narrowing or an obliteration of the lumen of the coronaries, with many spots of anatomical changes in the musculature of the heart, especially at its apex and septum. Elizabeth Pauli demonstrated that the anatomical cause of angina pectoris is due to a disturbed nutrition of the cardiac muscles caused by infarcts, parietal aneurysms (especially of the sep-

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

tum and apex) resulting from coronary sclerosis. Also that an exaggerated irritation of the nerves and ganglions in the walls of the vessels cause an active vasoconstriction with resulting ischemia which provokes the crisis of angina pectoris.

Weckenbach said that the theory of coronary sclerosis as a causative factor of angina pectoris is weakened by the fact that many cases of angina have shown no coronary lesion, whilst many cases of coronary sclerosis have never had symptoms of angina pectoris. His argument is refuted by many authorities who hold that the coronary changes may be so insidious that a collateral circulation may be established through its anastomotic vessels.

Degenerative changes of the coronary arteries may be either in patches or uniformly distributed throughout the myocardium. Changes in the elasticity and distensibility of the coronary arteries lessen the blood supply to the heart muscle, yet the degenerative process due to senility will also affect these as well as other arteries; however, angina pectoris is found only in a very small proportion of the aged.

Singer has demonstrated on dogs that ischemia of the heart muscle does not cause pain, and also that, whilst the pericardium, aorta and coronaries are sensitive to pain, that the ligation of these vessels causes pain only when their adventitia is preserved. I had the opportunity to observe a man with an ectopic heart. That organ, because of a congenital malformation of the sternum, was devoid of its bony protection and was only covered with atrophied muscles and skin, which corresponded to about the thickness of the skin on the dorsal surface of the hand. Freezing with ethyl chloride over the heart (to the extent of snow formation) caused no pains whatsoever, although the rate of the heart was reduced from 85 to 40 per minute in three minutes time. Doubtless the cold penetrated to the heart and produced sudden ischemia of at least the exposed portion of

the organ. Handling, freezing, pressing and tapping of that heart was absolutely unproductive of pain.

Usually the ischemia produced by a thrombosis or embolism of the coronary arteries gives a different clinical picture of the angina pectoris caused by other factors, although the ischemia so produced is very rapid. Allbutt stated that the coronary arteries and the myocardium have nothing to do with the pain of angina, but much to do with its mortality, and that in young persons with a normal myocardium the heart usually survives the inhibition. Weckenbach claims that the theory of coronitis should be rejected unless there be a thrombosis or embolism of those arteries to provoke pain.

Syphilis is the most frequent cause of disease of the proximal portion of the aorta, and is frequently a cause of angina. Aortitis may result from various sources of infection. Angina pectoris may be caused by a dilatation of the ascending aorta due to high blood pressure, or to a widening of the arch of the aorta caused by the hypertension. In either case, the stretching of the lumen of and the pressure within the aorta, provoke the paroxysm of pains. These cases usually improve with the correction of the contributing cause.

Frequently in autopsies serious aortic lesions are discovered without ever giving a history of angina pectoris, although the aortitis may be located near the orifices of the coronary arteries, a region rich in its nerve supply.

Merklen's angina pectoris is usually that of the decubitus. It occurs generally during the night when the patient is roused from his sleep by violent thoracic pains, which are not provoked by movement or eased by immobility. The patient is cyanotic, cold and clammy. The orthopnea is intense. The pulse is weak, rapid and irregular. Extra-systoles are present and the gallop rhythm is frequently heard; all signs of left ventricle insufficiency. The patient

is in great dread of impending death. The left ventricle will usually be found enlarged. The thoracic pains are caused by an acute dilatation of the left ventricle distending the aorta at its origin. When the heart resumes its normal size the pains gradually subside. A frequent cause of death in these cases is pulmonary edema, which is ushered in by paroxysmal cough, rattling in the throat, bloody mucus, expectorations and moist rales all over the chest. Yet acute dilatation of the left ventricle very frequently causes death without presenting symptoms of angina pectoris of the decubitus.

Mackenzie said that as we are ignorant of the cause of angina pectoris, the pain can best, for practical purposes, be considered an expression of exhaustion of the heart muscle, and, the angina, by compelling the sufferer to be careful and wary in his efforts, or to cease from effort, may be spoken of as protective in purpose. He also stated that there are cases in which the pain appears where the heart has not been exposed to particular effort, but in which there is a history of a long period of over-exertion preceding the onset of the angina. Even in the young and healthy this pain may be normally induced by excessive exercises; but the most frequent conditions provoking angina pectoris are the degenerative changes which accompany advancing years. However, the great majority reach the ripe old age with its structural changes in the blood vessels and the heart, with cardiac decompensation and impaired circulation without ever presenting symptoms of angina pectoris.

Danielopolu stated that fatigue of the myocardium is analogous to fatigue of the voluntary muscles, and that the intoxication of the neuro-muscular myocardium by the products of fatigue is caused by impaired nutrition of the heart. Normal contraction of all hollow organs are painless and insensible, whilst violent contractions or spasms cause pains. Violent heart contractions give palpation, shock, suffo-

cation, and sometimes paroxysmal angina. Pains are produced in hollow organs in two different ways, one by distension and the other by hyper-contractibility. This rule applies also the heart.

Whilst the theory may explain the cause of pain in some cases of angina pectoris, it does not furnish a satisfactory explanation of the pathology of the dreadful disease.

The symptomatology of the most typical type, the angina pectoris of effort is:

(1) Pain. A feeling of constriction, a squeezing in of the ribs, a tearing, piercing agonizing pain in the chest, or a burning sensation, usually of very short duration, lasting for only a few minutes, but the suffering persisting in many cases for hours.

(2) The pains are always in the chest, substernal, at the upper portion and to the left of the manubrium. They then spread to the back, and radiate to the left shoulder and down the internal portion of the left arm to the fingers, generally to the last two. Occasionally the pain may radiate to the left side of the neck, the angle of the jaw, and even to the top of the head. Great tenderness persists quite a time after the attacks.

(3) The patient must stop and remain immobile during the attacks.

(4) During the attacks there is a great fear and anxiety even in the most apathetic individual.

The predisposing cause of the attacks are usually some form of exertion or excitement or emotion, exposure to cold, or to the wind, or from gastric distention, either gaseous or after a heavy meal. Angina pectoris of effort is always very serious. Sudden death occurs from angina pectoris usually by ventricular fibrillation, or arrest of the heart's action by vagal excitation.

There is a type of angina pectoris which is as a rule benign, and rarely if ever ends

fatally. It occurs in the neurotics, persons who are very emotional and highly excitable, and who have all the hysterical stigmata, especially pronounced vaso-motor disturbances. Their palpable arteries are contracted, the blood pressure is as a rule low, and they are subject to spastic contractions of all their hollow organs. The angina pectoris is doubtless provoked by a spasm of the coronary arteries, causing an ischemia of the heart muscle. The history and the nervous and mental make up of the patient is often sufficient for the making of a correct differential diagnosis. The heart, aorta and coronary arteries are not diseased, the attacks are caused by an abnormally irritable and sensitive cardio-nervous system.

Coronary thrombosis and embolism are the most redoubtable complications as well as the most frequent causes of sudden death in persons with heart disease. The severity of these attacks depends upon the extent of the infarction caused by thrombi and emboli. Large acute infarctions result either in a rapid death or in a cardiac aneurysm. Successive small foci of softening, progressively disintegrate the myocardium with resulting left ventricular insufficiency. These infarcts are of the embolic type.

The symptoms are not characteristic of typical angina pectoris; the character of the pains and their localization are different, they are usually lodged in the lower sternal region or in the epigastrium. There is a profound and immediate shock, the extremities become cold, and the patient is bathed in cold perspiration, the respiration is shallow, there is a rapid and decided drop in the systolic blood pressure, and pericardial friction sounds can be heard in a few hours after the onset of the attack. Frequently gallop rhythm is noticeable, and

pulmonary edema is a common cause of death in these cases.

The friction sounds are caused by the inflammation of the pericardium overlying the area of the infarction.

Thrombostasis is characterized by the sudden appearance of violent dyspnea with cyanosis and passive congestion of the lungs, increase of the size of the heart due to aneurysmal dilatation of the infarcted area, high leukocytic count and the electrocardiographic findings.

Aneurysms of the aorta cause sometimes severe thoracic pains, but as a rule they are not anginiform. They are constant, lancinating and boring in character, and may occasionally be increased by exercise. Their location is limited to a particular spot of the chest. Their differential diagnosis presents no difficulty.

It has already been mentioned that aortic and cardiac dilatation may produce pain, anginal in character, caused by the distention of these organs. Dilatation of the left auricle often cause anginal pains by pressing upon the aorta at its inception.

Tessier and Dupasquier have described a syndrome of painful dyspnea, anginiform in character, in chronic pulmonary conditions with venous dilatation. They attribute the pain to a compression of the cardiac plexus by a dilated right branch of the pulmonary artery.

Hypertension may occasionally cause anginal pains. It is a fact that the stimulation of the central end of the depressor nerve results in two most important functions; one, a vaso-dilatation of the abdominal vessels, and the other, a slowing of the heart rhythm. The duty of the depressor nerve is to protect the heart against excessive blood pressure. As the hyperten-

sion which by increasing the intra-aortic and intra-cardiac pressure causes an irritation of the terminal fibres of the depressor nerve, through its reflex action it diminishes blood pressure, whilst at the same time through vagal influence the heart action is slowed. This function is important to note, because the *angina pectoris* caused by hypertension may be said to be protective to the heart, for by increasing the reservoir for blood (by vaso-dilatation of the abdominal vessels) the pressure must fall. This is a fact that the surgeon should seriously consider before operating for *angina pectoris*.

Acute pericarditis gives thoracic pains, which by the extent of their violence, and by cervical and brachial radiations, may effect an anginal character. The diagnosis is plain, but in all cases of acute pericarditis the possibility of coronary infarcts should be remembered.

Lyon is strongly of the opinion that *angina* of a reflex origin exists, which originates from gall stones, gaseous distention of the stomach and of the left bend of the colon.

All acute affections of the lungs and pleura, malignancy of the lower end of the esophagus, mediastinal and spinal tumors, Potts disease, all occasionally give pains similar in character to those of *angina pectoris*.

In the past few years cases of *angina pectoris* resulting from pernicious anemia have been reported.

Neuralgias, local in their scope, have been mistaken for *angina pectoris*, especially left sided cervico-brachial and thoraco brachial neuralgias. Their pains are not produced by effort and are not associated with cardiac abnormalities.

Intercoastal neuralgia because of its severe thoracic pains, and occasional causation of the sensation of compression of the chest, gives so similar a picture of *angina pectoris* as to make a differential diagnosis sometimes extremely difficult, especially at the onset of the attack.

Cramps of the intercostal muscles give paroxysms of thoracic pains. The myalgias, and rheumatism, of these muscles and pleurodynias have been sources of diagnostic errors.

SUMMARY.

Angina pectoris is a syndrome. The real underlying cause for the attacks is unknown; that such a cause exists is a certainty. But we know that certain pathological conditions of the heart and aorta predispose to these attacks, the most frequently found in autopsies are an aortitis, especially of the ascending aorta, or a disease or degeneration of the coronary arteries, the most frequent causes of *angina* of effort. The *angina pectoris* of the decubitus is usually of myocardial origin. I have usually found it in cases of cardiac decompensation and dilated hearts. It seems that the *angina* of effort frequently terminates in the *angina* of the decubitus. Weckenbach said that cardiac insufficiency is antagonistic to *angina*, the first giving way to the second.

This dreadful disease is increasing rapidly, it attacks mostly the well-to-do men, the brain worker, it is a malady more frequently encountered in private practice than in the wards and clinics of charity hospitals.

Whilst every case having thoracic pains or some disturbing sub-sternal sensation must be given careful consideration, yet, all chronic pains are not due to *angina pectoris*, and all *angina pectoris* is not deadly.

THE MECHANISM OF THE PRODUCTION OF THORACIC DISTRESS.*

GEORGE HERRMANN, M. D.†

NEW ORLEANS.

A rational understanding of the why and how, the pathologic physiology of a disease process is the first step necessary in the alleviation of the disturbance. A clear visualization of the *modus operandi*, even though it is based in part on theoretical assumption is essential in differential diagnosis and for rational therapeutic endeavors. Few conditions command greater respect or require more meticulous care, diagnostic acumen, and psychologic insight in their elucidation than do complaints of distress in the chest. A diagnosis of angina pectoris is of grave significance not only to the neurotic, temperamental intellectual, but even to the stolid, stoic fatalist. The awesome traditional designation strikes fear with its demoralizing influence into even the heroic soul. The natural bent toward the spasmodic type of reaction is exaggerated by being repeatedly precipitated.

The psychic factors and influences play a great part in the removal of central inhibition and the loosening of the reins of the vegetative nervous system. That there is a constitutional susceptibility to such abnormal reactions as are produced by an imbalance of the sympathetic nervous system is more or less generally conceded. Dr. W. R. Houston of Augusta, Ga. in a recent brilliant philosophical discourse illuminated this important subject anew with many keen observations and clever deductions. He called attention again to the frequency of the spasmogenic aptitude that reacts so distressingly to chronic fatigue and to disturbances in emotional life in Americans as contrasted with the

Chinese. This is attributed to the Occidental's psychological tendency to protest and to attempt to remove every difficulty in the environment, an external adjustment, rather than to make, as the Oriental does, an internal adjustment, accepting every situation as inevitable. Something of the same tendency is probably the reason for the relative infrequency of the classical picture in the negro, a fact called to my attention by Dr. I. I. Lemann.

PATHWAYS OF PAIN PERCEPTION.

Sensitivity to stimuli is in general a protective mechanism. The disturbing stimuli coming into consciousness produce a variety of sensations such as burning, pressing, constricting, strangling, gnawing, or cutting, which are all interpreted as distress or pain. Pain is the commonest symptom par excellence of a morbid process in any part of the body, not of necessity in the region in which the sensation is perceived. The conception of referred pain and of the intricacies of the specialized system for pain perception is important for diagnosis. Not all sensory end organs and nerves, when stimulated, register pain. Temperature, pressure, motion, and position are also recorded by the sensory system. Somatic sensory impulses are brought to the spinal cord through the spinal ganglia and the posterior nerve roots at the regular segmental levels. Visceral sensory impulses are conveyed by the sympathetic nervous system to the sympathetic trunk and ganglia and thence through the white rami to the spinal cord in certain segmental areas.

In the spinal cord the sensations of pain are conducted from the dorsal horn, where there is association with vasomotor and trophic function, across and by centripetal fibres of the second order in the opposite lateral column by way of the spinothalamic tract, ascending to the thalamus. This great basal nucleus is thought to act as the great connecting station through which practically the whole of the sensory tracts must pass before diverging to the cortical

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sensory areas. In the cortex the impulses pass from subconsciousness to consciousness for interpretation of sensation.

Many authorities consider the thalamus the center of pain perception. It is apparently also intimately concerned in certain emotional psycho-reflexes and responses. Exceedingly severe and continuous central pains referred to the contralateral half of the body with a persistent crossed hemianesthesia, as well as involuntary laughter or weeping, are symptoms of thalamic disease and give the clue to the functions described. It is thus quite possible to have a central pain, which may be entirely psychogenic, in high-strung, neurotic individuals.

The general picture and scheme thus completed gives us a broader view of pain perception. Somatic sensory and vegetative viscerosensory stimuli originating certainly as low as the diaphragm and perhaps also from or as low as the upper abdominal zone may give rise to referred thoracic pain or distress. The well known general tendency to spastic contractions of all hollow organs and tubes in individuals with the spasmodic aptitude would account for the occurrence of concomitant visceral spasms in widely separated and neurologically unconnected localized areas.

SPECIFIC CARDIOTHORACIC NERVOUS CONNECTIONS AND ZONES.

The nerve supply to the heart is an intricate meshwork derived from the autonomic and the sympathetic systems. Plexuses of non-medullated nerve fibers and ganglion cells spread over the roots of the pulmonary artery and the aorta spreading down along the coronary arteries and their branches just beneath the epicardium. There are fibers from the vagus and recurrent laryngeal nerves and from the superior, middle, and inferior cardiac nerves. These latter originate in the cervical sympathetic chain and ganglia, as well as in the stellate and first thoracic sympathetic ganglia to which structures great numbers of white rami pass.

THE OVERFLOW OF NERVOUS IMPULSES.

In man, impulses are apparently conveyed to the heart and to the brain directly by the vagus nerves and their intimately associated depressor nerves. Through the terminals of these paths in the region of the floor of the fourth ventricle, there may be overflow stimulation of the medullary centers producing the vaso-motor (pallor, sweats), secretory (salivation, diuresis) and reflex gastrointestinal functional disturbances.

Spread to the spinal cord is further accomplished through the gray and white rami of the cervical sympathetic ganglia, by the stellate and inferior to the seventh and eighth cervical segments; by the middle to the fifth and sixth cervical segments; and to and by the superior cervical sympathetic ganglion to the first to the fourth cervical segments from which originate the great occipital and the spinal accessory nerves.

The hypoglossal and glossopharyngeal stimulation by overflow may give the throat gripping sensation, while spread to the trigeminal, or the gasserian ganglion, may produce the pain that is sometimes felt in the jaw. There is also connection with the first to, and possibly including, the fourth thoracic sympathetic ganglia. The vasomotor fibers have been shown to accompany the cardio-thoracic nerves.

Head's figures show the first, second, and third dorsal segments as the cardiac zone, but clinical experiences give a much wider zone. This is presumably the result of stimulus overflow spreading up and down the cord with consequent painful sensations in the neck and chest and occasionally into the abdomen. Usually the pain distribution coincides with that of the seventh and eighth cervicals and the first, second, third, and fourth dorsal segments occasionally going as high as the upper cervicals and as low as the sixth dorsal segment.

The first dorsal segment supplies the inner aspect of the forearm from the elbow to below the wrist and together with the

third the sternomanubrial junction is supplied. The second segment is distributed, laterally to the first and third, to the inner aspect of the arm to the elbow, and to the axilla. The third on the arm spreads out anteriorly to the second. These three segments bear the brunt of the cardiac pain traffic, but usually the adjacent segments are somewhat excited.

The first and second dorsal segments are distributed to the jaw and neck while the fourth thoracic supplies a band around the chest just above the nipple in the apex of the axilla and over the scapula posteriorly. The fifth covers the zone over the breast and the angle of scapula; the sixth, the inframammary, xiphoid, and tip of the scapular zone; the seventh, the upper epigastric angle; the eighth, the lower epigastrium, stomach and liver regions; the ninth, the pyloric, duodenal and gall-bladder areas; and the tenth segment is distributed to the band of the umbilical region, encircling the trunk, embracing the base of the axilla and of the chest.

THE PAIN STIMULUS IN THE HEART.

It is in the explanation of the mode of origin in the heart of great vessels and the type of stimulus which produces cardiothoracic distress that opinions differ so much. The pathological changes vary widely in degree and in structures involved. The post-mortem changes are often seen in individuals who during life had no distress. The nervous make-up of the subject is apparently quite as important as is his cardiovascular pathology. Herein, therefore, lie the causes of the multiplicity of theories of the mechanism of cardiothoracic pain production. The stimulus may be physical or chemical. The general tendency has been to try to rationalize mechanical changes that would produce irritation of the nerve endings to the heart. The workings of such an explanation is more easily visualized.

The conception of occasional spasmodic contractions of the coronary arterioles is

still most plausible. Comparable abnormal states can occasionally be observed directly in the retinal arteries in individuals who are having frequent cerebral episodes. If the retinal arteries contract spasmodically at times, it is quite likely that other arteries will do the same under a similar stimulus. Arterioles and capillary networks in the skin have also been shown to become spastic as a result of a fall in the peripheral blood pressure and blood flow. Large normal arteries, with or without sclerosis and calcification cannot be expected to react in this way, much less so abnormal arteries. To account for the frequency of attacks in the face of such facts necessitates recalling the fact that probably only the smaller vessels, the arterioles, react significantly to vasomotor influence. Some pathologic changes in the major coronary branches or their orifices or in the aortic wall are practically always present. It is conceivable that the coronary circulation is chronically kept at a critical threshold by these pathologic arterial changes without or with the detrimental effects of a low diastolic blood pressure of aortic regurgitation and any infinitesimally small additional reduction suffices to overthrow a delicate physicochemical balance and precipitate an angiospasm and an attack of pain.

This latter upset is not of pain so easily visualized. The decrease in the coronary circulation produces an ischemia of the heart muscle with a curtailment of the vital oxygen supply as well as the general nutrition. This might conceivably result in a slight dilatation of the heart and a concomitant stretching of the coronary branches, which are accompanied by sensory nerves.

The distention of a coronary artery behind the spasm proximally may cause the pain inasmuch as the arterial wall is well supplied with nerves. In the aortic theory of the origin of anginal pain, dilatation of the great vessels with stretching and stimulation of its nerves and the contained

Pacinian or Vaterian sensory end organs, is the explanation usually offered.

The sudden traumatization of the pathological artery wall in response to nervous or mechanical stimulation with the production of obstruction by loosened or expanded atheromatous material in the vessel wall has no substantiating evidence. A large proportion of patients dying in status anginosus present damaged coronary vessels which if carefully dissected will show occluding thromboses. These conditions may, however, obtain without there having been a previous history of a painful seizure. The rate of development of the obstruction may be the factor that determines when there will or will not be pain.

How the ischemia* may give rise to pain is difficult to rationalize. We know very little about chemical stimulation of sensory nerve endings. It seems hardly conceivable that the ischemia of the heart muscle in itself could give rise to the stimulus.

No really analogous conditions suggest themselves. The lactic acid coagulation explanation of painful, stiff muscles the day following physical effort is certainly not applicable to the explanation of the sudden attacks of cardiac pain associated with emotion, eating, or exertion. In the pain of ischemia cordis intermittens of coronary sclerosis or in the explanation of chronic fatigue ache there may be more theoretical basis for this hypothesis.

Blood deficiency anemia and methemoglobinemia may result in myocardial exhaustion as may also undernutrition, avitaminosis, infection, and sudden overexertion. Chronic overburdening of the heart by chronic hypertension, valvular lesions, parietal pericardial adhesions, sinus tachycardia of hyperthyroidism, prolonged paroxysms of tachycardia, flutter, fibrillation, excessive vagatonic slowing,

and heart block may produce cardiac fatigue.

THE MORE APPARENT AND BENIGN TYPES OF THORACIC PAIN.

That there are benign types of distress in the chest, many of an extracardiac nature, is a fact that requires repeated and convincing reiteration. The manner of origin of these disturbances is quite as essential and for the most part less complex than that of the more malignant ones. A clear conception of the mechanism of these disorders is necessary for the further elucidation of the subject. Therefore, even at the risk of seemingly unnecessary recapitulation, I will discuss briefly again one of the more or less innocuous causes of thoracic distress.

PAIN FROM LOCAL DISEASE IN THE CHEST WALL.

Lesions of the bones, soft tissues, or muscles, as well as the nerves themselves, of the cervical spine, left shoulder girdle and arm, the thoracic cage and its lining membranes, and the pleura, such as result from trauma, pyogenic infection, arthritis, tuberculosis, syphilis, malignancy, or scar tissue may cause pain by direct involvement of sensory nerve end organs, nerve trunks, or posterior root ganglia producing neuralgia or myalgia pectoralis. These faces are well known and the mode of production of the symptom is obvious and there is rarely any difficulty in establishing the diagnosis once the condition is suspected and considered. The only reason for mentioning them is to recall them in connection with the broader aspect of the subject. It is to be remembered that proliferative arthritis or Pott's disease or other destructive lesions of the cervical vertebrae, cervical rib, or eroding aneurysms may cause upper thoracic pain by direct mechanical pressure irritation of the sensory nerves.

Intercostal neuralgia, neuritis, herpes zoster, the tabetic girdle sensation, or sharp crises are the painful responses of indirect internal, or endogenous irritation of the nerves, ganglia, or posterior roots. Acute pleurisy may cause pain in any part of the

*This conception of ischemia has recently been re-emphasized and offered as a new theory expressing the state of the heart muscle as anoxic rather than ischemic and attributing the manifestations of this state as others had to ischemia.

chest. The pain is usually just over the area of pleural irritation and consequently the characteristic friction rub is usually easily discovered and may be considered confirmatory of the diagnosis in the absence of other signs of cardiovascular disturbance. Acute pericarditis involving the apical and diaphragmatic areas where the nerve and consequently sensitive pleura is reflected over the pericardial sac, as described by Capps, of Chicago, will give rise to precordial pain. In those past the age of 40 years the pericarditis of a cardiac infarction following coronary thrombosis must be differentiated from a simple apical or diaphragmatic pericarditis with pain.

GASTROCARDIAC DISTRESS.

The very common precordial distress associated with gastric disturbance is in a large measure a mechanical phenomenon. The reflex may originate from the large cardiac end, sphincter and fundus of the greatly distended viscus. The flatulent organ pushing up the infracardiac dome of the diaphragm may mechanically force upward and backward the heart, twist it, and embarrass its action and its circulation. Sharp palpatory thrusts under the left costal margin aggravate an existing gastrocardiac distress while the free eructation of gas relieves the condition. The mechanical effects of gastrectasis may embarrass the circulation even in normal coronaries, but the effects are likely to be considerably more serious in the individual with diseased coronary vessels.

The hypersthenic habitus with a high, flat diaphragm, a protuberant abdomen with an omental fat mass and an increased intra-abdominal pressure are predisposing factors. This disturbance responds to reassurance along with the use of some discretion in the choice of diet. Flatulence producing vegetables, liquid foods, and wind-sucking (aerophagia) should be avoided. Potassium acid tartrate, 30 gram doses in hot water on arising or half an hour before meals, is often of value in controlling the excessive flatulence.

REFLEX PAIN IN THE DORSAL SEGMENTAL AREAS.

Segmental distribution of overflow impulses has been commented upon. The so-called reflex irritation comes into play and accounts for much thoracic distress. Lesions of the diaphragm may present, especially by way of the phrenic nerve, reflex pain distributed high in the chest and the neck. The phrenic nerve levels are chiefly the fourth cervical with some from the third and fifth cervical segment. Occasionally, subdiaphragmatic lesions, especially those originating in the gall-bladder and the cardiac end of the stomach, rarely in the pylorus or lower organs, may give rise to intense enough stimulation that there will be an upward, segmental overflow to produce reflex upper thoracic pain. Discovery and alleviation of the primary disease process is usually followed by a subsidence of the reflex pain.

When the painful reflexes originate in the cardiac tissues, even though the precipitating factors are of temporary mechanical or toxic nature, the symptom is of more serious moment. It is true that the individual attacks are benign in themselves, but the frequent repetition of the episode may not be entirely innocuous, for under most circumstances the blood supply of the heart is definitely, though only slightly and temporarily, curtailed.

A toxic *nicotine* type of precordial distress of more or less benign character, which is worthy of further comment, is that occurring in tobacco smokers. Persons, often under stress, smoke tobacco incessantly, usually inhaling the smoke deeply. Under these circumstances and often in more susceptible individuals with less abuse of the weed, there occur attacks of cardiac distress. The paroxysms may simulate quite closely the classical picture. Nicotine may act upon the cardiosympathetic nervous system and influence unfavorably the coronary circulation. It may act as epinephrine does merely as an exciting factor in the presence of a latent process.

Patients with frank coronary disease are often very chronic, inveterate tobacco addicts, and many observers are of the opinion that there is some causal relationship. This is more likely to be true for individuals who have an inherited tendency to coronary disease, for others can apparently indulge to excess with impunity. The chief characteristic of the so-called nicotine angina is its precipitation only after inhaling tobacco smoke and its prompt subsidence following the abstinence from tobacco. In some individuals with coronary disease, the inhalation of tobacco smoke will cause the onset of an attack of pain. The evidences of increased vagus tone, the slow irregular sinus arrhythmia with or without ectopics or premature contractions, likewise promptly disappear after stopping the use of tobacco.

The *neurogenic* form of more or less benign precordial distress is described by individuals after an emotional upset, usually thin young females of a high-strung, neurotic temperament at puberty, in the presence of endocrine disturbances or at the menopause. The pain of the soldier's heart in the "effort syndrome" would come under this heading. The abnormal sensation varies from a heavy subcardiac ache to sharp, sudden, instantaneous precordial pains that momentarily transfix the thorax or radiate to the left axilla or left shoulder and sometimes even into the left arm. Ectopics or premature contractions of the heart are usually noted and will account for the sudden, sharp, darting, momentary pains and palpitation in these very sensitive individuals. The patient is usually erethistic, restless, and emotional, tossing about in bed insisting hysterically that her death is near. Irregular rhythms, tachycardia, palpitation, throbbing sensations, giddiness, and even vertigo are common symptoms which are, however, rarely present in one critically ill with the serious heart pain. The attacks are usually relieved by sedatives, as bromides and bar-

bitals. On exertion the patient has a good exercise tolerance. Except for the mechanism disturbance, the cardiovascular system is entirely negative in this condition. It is, however, unfortunately also true that some cases of true anginal syndrome present very little abnormality on physical examination.

THE MORE OBSCURE AND SERIOUS TYPES OF THORACIC PAIN: MYOCARDIAL EXHAUSTION ACHE.

Pain, as a result of the adverse influences to be outlined presently, may prove afflictive to the sufferer but usually the course of the disease is a chronic one. Chronic overburdening of the heart by excessive physical strain or the maintenance of a chronic hypertension against a relentless peripheral arteriolar resistance with an occasional, sudden, sharp increase in the load exhausts the heart muscle. The pain is usually dull and aching, but may occasionally be sharp as a result of cumulative fatigue and sudden strain which may produce some dilatation. Vasodilators usually promptly relieve this distress. Venesection acts likewise and is often life saving in the presence of pulmonary edema.

Prolonged, sudden, and excessive disturbances of the cardiac mechanism, such as paroxysmal tachycardia, flutter, fibrillation or block, especially those with very high or very low rates or in individuals with some coronary arterial changes, may have sufficient embarrassment of the intramyocardial circulation that breast agony arises. Avitaminosis, undernutrition, methemoglobinemia, anoxemia or anemia may, in sensitive individuals without or in the presence of sclerosis of the coronary arteries, give rise to cardiac distress, presumably the result of myocardial exhaustion.

Chronic adhesive pericarditis binds down a heart and the constant tugging against the fixed anchorage exhausts the myocardium and this along with the frequently accompanying embarrassment of the coronary circulation by the adhesions gives rise to distress.

Certain chronic valvular diseases, especially aortic and the mitral stenosis and insufficiency, may be associated with dull or sharp, constant or paroxysmal cardiac pain. In aortic stenosis the chronic overload, the low pulse pressure, and in stenosis and insufficiency as well the frequently occurring changes in the coronary orifices (accompanying the valve lesion), all lower the circulation in the heart muscle. In mitral disease Sternberg found the fat pad about the circumflex coronary branch atrophied, presumably the result of pressure from the engorged left auricle. The wall of the vessel was also thinned, so much so that any sudden increase in intra-auricular pressure could obliterate the artery or narrow it considerably, thus interfering seriously with the coronary circulation. It must also be remembered that the common etiologic agent of the valve lesions, rheumatic fever, may have extensively involved and have left scars in and near the coronary arteries.

Sclerosed coronary arteries or narrowed coronary orifices apparently cannot dilate to allow the requisite threefold coronary circulation that the heart demands on exertion. Exercise thus produces the ischemia cordis intermittens with pain of Bischoff, which subsides with rest. Fatigue, anemia, ischemia, or anoxemia are present and probably some stretching of the cardiac structures occurs. Besides rest, vasodilators, especially of the xanthin group, notably theophylline ethylenediamin (metaphyllin, euphyllin), relieve the distress in a large degree. The drugs should be given in 0.1 to 0.2 gm. ($1\frac{1}{2}$ to 3 grains) doses every three or four hours. Complete solution of the preparation is a most essential detail and is often the deciding factor in the success or failure of the effectiveness of the drug. The latter drugs, used regularly daily, apparently ward off attacks by keeping the coronaries more or less dilated, thus increasing the circulation to the heart

itself and raising, so to speak, its tolerance or threshold.

CORONARY THROMBOSIS AND CARDIAC INFRACTION

Organic obstruction of the blood flow through a major branch of the coronary artery precipitates a clinical picture that is frequently difficult to differentiate from the spasmodic syndrome of angina pectoris. The individual prone to this sudden catastrophe has usually had few if any symptoms of heart disease. Slight breathlessness and slight distress may or may not have been previously felt after a considerable effort. The victim is not infrequently convalescing from a respiratory infection of the influenzal type, or has an infectious focus that is or is not being treated.

Acute circulatory collapse may come on rapidly and be the outstanding symptom complex. An ashen gray sallowness, a saturnine pallor to actual cyanosis is present. Usually, however, a terrific agonizing pain predominates the picture. This pain differs from that of the classical syndrome chiefly in its persistence for hours and sometimes for days and weeks during which it is constantly present, but sometimes it presents waves of increased sharpness. Vasodilators, which act so dramatically in spasmodic pain, fail to relieve the pain of coronary obstruction. Morphine or pantopon in 30 mg. or $\frac{1}{2}$ grain doses is usually required to give any relief. Absolute rest during this critical period is of paramount importance and should be secured as completely as possible. Measures to prevent the advance of the thrombosis or secondary thromboses are still only in the experimental stage. The classical status anginosus is almost exactly reproduced. In the true status anginosus there are, however, usually brief intervals of relief, and vasodilators are effective, but not so in that state in coronary occlusion.

The patient apparently soon learns that no fixed position, no tenseness of muscles does any good, and sometimes, not even exertion and eating affect the pain. Ex-

treme weakness, however, often strikes the patient down and makes him unable to move about. The power of speech may fail him. The pulse is usually very rapid or very slow and is often irregular and often barely perceptible. The blood pressure usually falls precipitously to dangerously low levels of 60 to 80 mm. of mercury. The heart sounds become very faint and muffled, and a pericardial friction rub may appear promptly or after several hours to a day. Within thirty-six hours a slight fever and a leukocytosis are present as a result of absorption of products of the necrosing infarcted myocardium. Electrocardiographic tracings show significant ST interval and T wave changes in a large proportion, perhaps 75 per cent of cases, but unfortunately not in all cases.

Disproportionate dyspnea, pulmonary edema with congestion and hemoptysis, cyanosis, vomiting, and hiccough are much more common after coronary thrombosis than in classical paroxysmal cardiac pain. The cardiac infarction pain is also much more likely to be in the epigastrium and associated with other abdominal reflex states. The liver is more likely to be engorged after cardiac infarction, and further evidences of myocardial insufficiency as congestion and edema appear more rapidly. Death may come in or at a shorter or longer interval after the first breast pang.

The attack may subside, and with rest in bed the patient may recover. It is not uncommon after such a recovery to find that the patient is subject to cardiac pain on exertion. In this post-coronary thrombosis condition I have felt that persistent vasodilators, such as theophyllin ethylenediamin or theocin, which increase the coronary circulation, aid greatly in the reparative processes and increase the exercise tolerance and preclude the secondary attacks.

ANGINA PECTORIS.

The term "angina pectoris" has been retained for the traditional, dramatic type of

spasmodic heart pain attack. The classical picture will bear detailed consideration, for entirely satisfactory clinical differentiation of the morbid state present or the abnormal physiology responsible for cardiac pain is at present not always possible.

The earlier, milder attacks or this symptom-complex are usually ignored or mistaken for disturbance in other organs, especially the stomach. The retrosternal position of the abnormal sensation is its chief characteristic and this along with a consideration of the provoking factors and the relieving factors may give the clue. The abnormal sensation may be merely a heaviness or a burning that may simulate closely a pyrosis. The absence of physical signs of aortic or cardiac disease makes the diagnosis little more than a guess under these circumstances.

The typical paroxysmal, spasmodic attack of angina pectoris strikes precipitously and paroxysmally, transforming an apparently healthy, active individual into an immobile statuesque figure. The victim suffers an excruciating, burning, vise-like, crushing squeezing, tearing, strangling, constricting, choking or oppressing pressure, heavy weight sensation, or a violent substernal pain at the level of the upper and middle third of the sternum. The alarming suddenness, the sense of imminent dissolution with the clear, intellectual faculties give rise to an indescribable anguish and anxiety. The distress seems unbearable, and the few *minutes* during the attack pass like hours.

Palpitation of the heart and a momentary sensation of suspended respiration may be felt, as may also epigastric fullness and nausea. The pain most characteristically radiates to the left shoulder and down the inside of the left arm. It may transfix the left chest to the left back; it may pass to the right arm or into the neck, giving the sensation of strangulation, to the jaw on one or both sides, or to the face, or even to the top of the head. The pain in the secondary area may begin immediately or lag

behind and may be spread over a wide area or be localized to the wrist, elbow, or inner upper arm. It may be sharp or it may be dull and aching—merely a heavy feeling associated with numbness and tingling. Soreness may remain for hours. Repeated attacks in close succession produce a status anginosus.

Accompanying vasomotor disturbances in the attack cause the patient's face to grow ashen pale, beads of perspiration to appear on his forehead, and his body to become clammy with perspiration and his extremities cold. He usually holds himself rigid in his steps with his hand over his heart. The respiration is seemingly unaltered; there is usually no dyspnea, though the breath is shallow or constrained because of distress. Eructations of gas and profuse micturition of pale urine may come at the end of an attack. The pulse and heart action are usually regular and not at all affected though a slight rise in rate often occurs. The heart is usually at the upper limit of normal in size and only occasionally is it enlarged. The aortic dullness may or may not be slightly increased. An aortic systolic murmur and an accentuated aortic second sound in the presence of a normal or low blood pressure are significant findings. The blood pressure frequently, but not invariably, shows a rise during an attack; occasionally, it remains unchanged and sometimes there is a sharp fall. The electrocardiogram frequently records changed or inverted T waves and shifted ST intervals during an attack.

The dramatic relief afforded these patients by the use of nitrites or alcoholic preparations along with rest is characteristic, and the attack is always aborted by the specific drugs. The precipitating factors are emotion, anger, worry or fright, eating, overdistention, flatulence, exertion, and cold drafts. Bromides in full therapeutic doses will often break a succession of attacks by dulling the sensory reception of provocative stimuli and will reduce greatly the frequency of attacks when taken regularly in

1 gram (15 grains) doses. Soporifics, as chloral hydrate in 1 gram (15 grains) doses at night or 0.3 gram (5 grains) doses at intervals are especially effective in quieting nervous, hypertensive individuals. Antispasmodics, as atropin in 0.5 mg. (1/100 grain) doses or, better still, homatropin brommethyle in doses up to 25 mg. (1/2 grain), are often distinctly valuable in preventing and averting attacks. Vasodilators with persisting action, such as potassium iodide in 1 to 2 gram (30 to 60 grains) doses, erythrol tetranitrate in 60 mg. (3/4 grain) doses, and theophyllin ethylenediamin theocin or 0.1 to 0.2 gram (1 1/2 to 3 grains) every four hours are of value.

SURGICAL INTERVENTION FOR THE RELIEF OF ATTACKS OF CARDIAC PAIN.

It is only after the attempt to find out the irritative precipitating factor and removal of it is unsuccessful, and rigid application of a therapeutic regime has failed that the radical surgical measures are to be considered. Once the decision has been made, the operative procedure of choice depends in a large measure upon the condition of the patient. Cutler's statistics seem to indicate that extensive ablations of the entire cervical sympathetic chain including the first thoracic ganglion on the left and then on the right side offers the greatest hope of lasting relief. This extensive and radical procedure has afforded relief even in the advanced severe types of the disorder. A complete unilateral procedure has been well borne even by patients of the most serious type of the disturbance. However, it is preferable to have the patients upon whom such operations are contemplated measure up to the ideal requirements as good surgical risks. Relatively few patients with heart disease can even approximate such physical standards.

Furthermore, the success that has attended the operation of partial sympathectomy of Coffey with the removal of the superior and middle ganglia only with or without division of the superior cardiac nerve and that of sectioning confined to the

rami communicantes, as practiced by Leriche, to the stellate ganglion as the complete operation or as the first stage to a subsequent more complete sympathectomy have been shown to make the extensive and serious ablation unnecessary.

The procedure of Coffey has been most popular in this country. Partial sympathectomy limited to the middle and inferior cervical or to the stellate ganglion have been practiced. Leriche and Fontaine have advocated the division of only the rami communicantes of the stellate ganglion as the most desirable procedure. The majority of the cardiosensory fibers to the spinal cord are said to pass by this route. The sympathetic trunk above the stellate ganglion is usually also cut. The continuity of the cerebral nerve is thus interrupted and the depressor fibers, when identified, are severed. The partial procedures are apparently simple and can be accomplished with little or no coma, general anesthesia, shock, or danger to the patients and can be applied in cases where grave cardiac failure would contraindicate any other operation.

Patients with cardiac pain that have been subjected to operative procedure and whom I have had the privilege of following up have in general fared well. Two of the patients were women with definite cardiac infarction and more or less constant, agonizing status anginosus. In both of these, in spite of contra-indications, partial sympathectomy was done as a humanitarian measure to relieve the intense suffering. In both instances the sharpness of the pain was removed. There were still attacks of a peculiar feeling in the chest, suggesting an abortive seizure and serving at the same time as a warning. One patient lived but two years during which time she was relatively free from agony. The other patient had a very stormy postoperative course, finally presenting embolism of the extremity which had to be amputated due to gangrene. She was relieved to a large extent and lived three years in comparative comfort. One other patient was slightly relieved, one was

not relieved at all except perhaps some of the sharpness of the pain was relieved.

In the face of these facts, however, any one who has seen the dramatic results that sometimes follow operations cannot help but be enthusiastic and feel that in the resistant sufferer, operative procedure offers something for the otherwise hopeless case. It is true that death may come and does come in a small percentage of the cases during the operation, but ultimately and usually within a period of a few months to a few years a fatal attack is suffered. Others may live a few weeks or a few months or even a few years, and even a short interval of freedom from pain is sufficient to justify the operation.

SUMMARY AND CONCLUSIONS.

One might consider the recognition of the mechanism at fault in a given case of thoracic distress as constituting the diagnosis and prognosis, and at the same time as more or less outlining the therapy.

It is interesting, as well as advantageous, to think in these terms and furthermore, it is so much easier to grasp and hold the principles of the pathological physiology involved than to try to remember empirical dogma.

The decreased coronary circulation theories of the origin of cardiac pain have most support. The susceptibility of the nervous system of the given individual is quite essential. The spasmogenic aptitude is common in our age and in our land.

Coronary thrombosis is probably the usual complication in all fatal cases of breast pang. In the malignant spasmodic type of thoracic pain death may come—and does come—sometimes in true anginal attack even when the patient is under expert care.

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DISCUSSION

D. I. I. Lemann (New Orleans): You have heard a masterly and exhaustive discussion of all that is known with regard to the pathology and the pathological physiology underlying these various forms of thoracic pain, particularly of heart pain.

I wish to address my remarks entirely to the clinical implications of this exposition, and I wish to reinforce what has been said by both the essayists as to some of the difficulties presented to the clinician in the interpretation of the various types of pain of the chest.

In the first place, I think we should all be impressed by the lack of correlation between the intensity of the pain and the seriousness of the condition underlying the pain. We may have very great pain in the patient and apparently very little seriousness, and we may have, on the other hand, comparatively little pain and very great seriousness. As to the latter, which of course is the more important of the two, I recall at least two patients in whom the diagnosis of coronary occlusion could be made without there having been much, or at least very agonizing, pain.

A man of about forty was taken with some discomfort after his evening meal and applied to a drug store for some remedy. He continued to have the pain that night and the next day. The next afternoon, nearly twenty-four hours after his pain had started, he came to Touro Infirmary where he was seen by the chief resident who could find nothing on physical examination, and prescribed a sedative. The man continued to have

pain the second night and came back to the Touro Infirmary the third morning. When I saw him he did not object to being put off until the afternoon; his pain wasn't that agonizing. When I saw him in the afternoon he was apparently in no great pain or discomfort.

Within the next twenty-four hours, this man, whose picture I have just painted, developed a little fever, a leukocytosis, a pericardial rub, and a few rales at the base of one of his lungs. The electrocardiogram showed a typical inverted T wave in all three leads.

After this man was in the hospital a week, it was very difficult to convince him that he had ever been seriously sick.

I submit that here was a case of a very serious heart accident, who had such pain as might have been passed off; in fact he did pass it off for more than forty-eight hours as being nothing particularly serious.

I wish to emphasize, too, that in these coronary accidents there often is lacking the classical picture of heaviness, the lack of immobility, the lack of fear of impending death. On the contrary, I have seen a man actually moribund from coronary occlusion, who had such a great deal of pain as to become maniacal, and so excited that it took three people to hold him down in bed and who, in spite of attempts to restrain him, got up and walked around the room to within two or three hours of his death.

Another man, who had lost both of his lower limbs through Buerger's disease, and had a terminal coronary occlusion which I attributed to a central Buerger, had so much strength in the end that he was able to lift himself from the bed-pan, raising himself on his arms without any support from his legs.

Then I wish to refer briefly to the very great difficulty of the differential diagnosis between the pain of heart disease, of angina, if you will, or of coronary occlusion, and the pain of gall-bladder disease, and to remark that there are patients who may have both.

I recall one patient of whose illness I had read in the Journals, a well-known public man who was operated on in a well-known clinic for gall stones which were removed and who in his convalescence died of an angina attack.

Finally, I wish to refer to the very great difficulty in the minds of all workers in this field of differentiating between the classical picture of angina, and that which we have now come to recognize as definite coronary occlusion; a matter that becomes all the more important when one con-

siders the concluding sentences of Dr. Herrmann's paper when he discussed the advisability of surgical intervention.

If we can look upon a patient as having only a Heberden angina without definite anatomical disease in his heart muscle, or in his coronary arteries, we may plan for surgical intervention with some degree of complacency. If, however, we find difficulty in reconciling ourselves to such an idea of a patient having such attacks without definite anatomical disease, we shall want to interfere surgically very seldom.

The more I have seen these patients, and the more I analyze my own cases, the more reluctant I have become to make a diagnosis of angina pectoris without serious heart damage. In fact, I will say now I know of no patient in my own series where I would have been willing to say that the patient had no anatomical disease of the muscle or of the coronary artery. This attitude, then, explains why no sympathectomy has been done in New Orleans. Evidently the other clinicians have had the same experience.

Dr. E. W. A. Ochsner (New Orleans): If a mere surgeon may be allowed to speak before the Medical Section, I should like to say a few words with regard to the sympathectomy in angina pectoris.

I had the good fortune to work with Professor Schmieden in Frankfurt am Main, Germany, when he operated upon eighteen cases of angina pectoris. At that time indications for sympathectomy were not as striking as they are at the present time. I can recall two or three cases of definite syphilitic heart diseases which were operated upon, and one case of arteriosclerotic heart disease. In all of these cases there was no operative mortality. I think the procedure, if carried out correctly, is relatively without danger from an operative standpoint.

It is true that individuals with syphilitic heart disease, or individuals with arteriosclerotic heart disease will receive relatively little benefit, but they will be relieved of their pain.

I agree with Dr. Lemann that if we feel sure the individual has a coronary occlusion, that the case is probably not suited for a sympathectomy. However, I believe it is possible (not being a cardiologist it is probably safe for me to make such a statement) to operate in the early case. I think if the operation is to be done, it should be done early before a great deal of myocardial damage is done.

Concerning the operative procedure which is indicated, our conclusions were that the complete Jonnesco operation, which consists of the removal of the first, second and third cervical sympathetic

ganglia as well as the first thoracic, was the operation of choice. Any procedure short of this radical procedure gives only palliative results.

Coffey and Brown of this country advise removing the superior cervical sympathetic ganglion alone, believing that they in this way interrupt the motor fibers. We felt however, that if the operation is to be undertaken, a complete Jonnesco, including the removal of all three ganglia, is the operation of choice.

I should like to see some cases operated on. I think it is to be lamented that where this operative procedure has been done in over 300 instances, from a recent report by Brill, not one has ever been done in New Orleans where there is so much clinical material at Charity Hospital.

Dr. A. E. Fossier (closing): In answer to Dr. Ochsner, I didn't have a chance to go into that subject at all because there is so much to it; it is easier to write a book on that subject than it is to write an article in order to bring it within a fifteen minutes' talk.

The only time I was tempted to have an operation performed on my patient for an angina was a case that got well for quite a length of time and never had another attack. That experience has made me more or less very doubtful, but reading the statistics on the subject in the Journal very lately, and the results of many operators, they are simply overwhelmed with operations. Every surgeon has some choice procedure. Coffee and Brown even say there is no depressive nerve because it has been said when you cut a depressive nerve it causes a lot of trouble.

I am not in accord with it now; I want to know more. I am not a surgeon. I am not so enthusiastic about cutting when something else can be done. The rate of mortality there is about thirteen per cent. You are subjecting the man to a mortality of thirteen to fifteen per cent, with the chances of doing him any good about thirty-five to forty percent. That is my impression from the various authorities on the subject, so if a man has a chance of dying in thirteen out of 100, and you may only cure him thirty-five or forty times, I don't believe in subjecting him to that chance when we can do nearly as well in those cases with medical treatment.

As far as the angina decubitus, which is usually due to dilatation of the heart, these cases come at a stated hour, usually during the night. I have been called many a time. I have been able to ward off the attacks with a dose of atropin before the time the attack should take place. I have had quite a few of these. Atropin given at that time seems to have a beneficial effect in warding off

those attacks, whether you call them dilation, angina decubitus, or what you want to call them.

We don't know much about it. We know they are increasing with individuals. I think a great deal of it is due to lack of exercise, the indolence of people, and some of our doctors who are afraid to walk and who take an automobile to drive two blocks. There is a degeneration taking place in these heart muscles because they are not working hard enough to keep up. The laborer doesn't have trouble, but the people who do have trouble are those who sit down too much and drive automobiles most of the time when they ought to walk. There is something back of it. I have not been able to determine what it is, but it is increasing in those cases. They play golf once a week and sit down for a whole week, then when running for a car or on the golf links, down they drop and off they go and we read about it in the papers the very next day.

Dr. George Herrmann (Closing): I am fortunately still young enough to be quite radical in opinions and not be too severely criticized for those opinions. Therefore, I still believe there is abundant opportunity for surgical intervention in these cases. Certainly our knowledge of the sympathetic nervous system and the conduction paths from the heart has been greatly broadened by careful removal of certain parts of the cervical sympathetic system, and gradually we are learning something more about the pain conduction paths.

A pain is an important factor in this disease process. These patients die in pain, no matter who the medical man may be who is treating them. They all eventually die of pain. Almost all these cases have coronary thrombosis. May not repeated attacks of pain predispose to a more permanent occlusion? I have been able to dissect and have in a few instances been able to find coronary thrombosis in the smaller arteries.

Why do they die? Something in the attack cause the death. It is apparently associated—in the spasmodic type I am speaking of especially—with a spasm of the coronary arteries and perhaps in the medullary arteries. Any obliteration that may prevent the repetition of that spasm I think insures the patient longer life, or at least a happier life.

I believe the functional part of the disease is important. Spasm of the coronary may precipitate ventricular fibrillation, and the patient dies from the seizure due to the neurological stimulation that has been incurred. To find a patient with cardiac pain who has no organic changes is impossible, I believe. I think they all have organic changes, and I do not believe organic

changes are a contradistinction to any method that may sever painful tracts.

The painful tracts may be separated even in the presence of pathological changes. I believe these patients are running on a certain level, a critical level, where any further insult of neurogenic origin will precipitate the attack. If you can remove that insult, that stimulus, you will save the patient from further attack. Even in the presence of definite coronary thrombosis, such as was present in the two cases reported recently which were observed several hundred miles away, these patients were relieved of status anginosus. I saw one patient in St. Louis who was in status anginosus for five and onehalf weeks, agony all the time, with acute exacerbations. We didn't know much about sympathectomy. Nobody wanted to undertake it at that time and the patient had to suffer the tortures of the damned. I believe in that patient, at least, the injection of alcohol to block the painful paths would be a humane procedure even if the patient died in the operation. He is better off dead than enduring such pain which cannot be controlled with morphin or atropin.

DIAGNOSIS AND TREATMENT OF ACUTE AND CHRONIC ILEO- COLITIS IN INFANTS AND CHILDHOOD.*

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RICHTON, MISS.

Due to the short time allotted for the discussion of this important subject which has caused all of us more worry than possibly any other disease, especially during the summer months, it will be impossible to do more than merely mention the major points as to diagnosis, differential diagnosis and symptoms, and devote more time to discussion of treatment. It is my desire in the discussion of this subject not to present a highly technical paper. I would not if I could. I could not if I would.

Reviewing the literature of fifty years ago, I find that authors of then and now give almost the same clinical findings but a great deal of laboratory work has been done which helps in making a correct diagnosis. However, one is forced to admit

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that after reading many of the text books that have been written telling of the microscopical and pathological findings, they usually wind up with the cheering statement, "It has not been definitely proven."

Our predecessors usually had about three classifications, viz: flux, bloody flux and, just before the baby died, looked sad and wise, then added that last classification, inflammation and congestion. This is a classification which some physicians still hide behind, when they are out in the country where they feel sure it will not get out, but usually we are greeted by some fellow coming in at a very inopportune time to ask "If it were really true that inflammation and congestion set in, and killed Little Willie."

CLASSIFICATION.

These are many, almost every author has one of his own, but I shall mention just a few selected from them all in discussing the acute type; viz: diarrhea, acute inflammatory diarrhea, acute ileocolitis and acute dysentery. These are synonymous terms and should be treated as such.

ETIOLOGY.

This disease is found more often during the summer months and occurs principally during the first and second years of life. It is also true that in the rural population where most of the cases are found, the colitis season opens principally with the coming of may haws and yellow plums and closes when raw potatoes and peanuts are gathered.

In breast fed babies, it is seldom found; therefore, the practice of weaning the baby during the first few months of life is nothing short of a tragedy and may God give us more physicians who will have enough interest in the under-privileged children to warn their mothers about what may happen if they wean their babies too soon. That is not the worst. How many of you have had mothers bring their babies in for treatment of colitis and when the question is asked as to whether the

baby is breast fed, received an answer about as follows: "No, I weaned the baby two weeks ago, for Dr. A. milked a few drops of milk from my breast and said my milk was not agreeing with the baby and I must take it off the breast and give it Dime Brand condensed milk?"

Surely no man under the sound of my voice has been guilty of the "Attempt Baby Slaughter," for really that is what it means in many cases. Tell the mother that at least ninety-eight percent of them can nurse their babies and the quality of the milk is alright although the quantity may be lacking, which can be remedied by adding complimentary artificial feeding.

Overloading the stomach with too much of the proper kind of food; or feeding the baby food that it cannot digest; or feeding milk that has been contaminated by careless and filthy handling; extreme heat and cold with undue exposure usually brought on from long trips during the hot summer or cold winter months, are also causes of diarrhea and colitis.

DIFFERENTIAL DIAGNOSIS.

There are many diseases which are easily overlooked when we are treating the various forms of intestinal toxemias so often grouped under ileocolitis. Typhoid fever sometimes is so similar in symptoms to colitis, that it is necessary to be on guard, but as a rule typhoid is more gradual in its onset, with the typical typhoid temperature curves, no blood until later and as a rule stools are less frequent. We must rely on the Widal reaction which may be obtained about the ninth day to make sure of our diagnosis. Appendicitis is another condition that at times is overlooked until too late for an operation that might have saved a life. However, in appendicitis, the onset is usually more acute, with a higher blood count and more pain.

DIAGNOSIS.

The physician often receives a hurry call to see a baby, who a few hours before was well, and is now having convulsions

which is almost always due to an overloaded stomach with food that the child cannot digest. It may be half ripe plums, peanuts, bananas, cabbage, in fact anything that is grown south of the Mason and Dixon line. The onset is sudden, temperature high, 103° to 106°, may or may not have vomiting, diarrhea, patient's face drawn, muscles may be rigid or completely relaxed, lies with eyes half closed and extremities often cold, body may be cold and clammy.

In another type of cases, the onset is more gradual beginning first with a mild intestinal indigestion, deranged bowel movement that contains some undigested matter; stools may be frequent or may not; fever gradually rises from day to day, child is cross and does not rest at night; appetite poor, and the stools that first were watery begin to show some mucus and blood which can be found microscopically from twenty-four to forty-eight hours before it can be seen in the stools. The blood, however, may be one of the first symptoms but usually shows up in from three to five days. The abdomen is distended, lips parched and often red, skin dry, eyes sunken and muscles relaxed, urine often shows traces of albumin and there is an increase in leukocytes.

The prognosis is good provided we begin the detoxication treatment early and support our patient by giving plenty of fluids and the proper kind of nourishment.

PROPHYLACTIC TREATMENT.

It is much easier to prevent than to cure, therefore, it is very important that the babies be kept on breast for at least six months, as breast fed babies seldom have colitis. In artificial fed infants, the milk should be boiled and precaution taken to prevent contamination by careless handling of the food. Thorough sterilization of bottles and nipples are very essential.

It is also true that many cases of colitis are caused by giving purgation to correct some mild intestinal disturbance, a practice that has in my mind caused more

deaths than any other condition that arises from this disease, and one that cannot be condemned in too strong terms. The sooner we as medical men come to realize and accept the proven fact that ileocolitis is not a condition that must be combatted with drugs, the better it will be for the lives of the infants who fall into our hands for treatment. The baby's general condition must be watched and kept up to standard for it is the under-nourished children that usually fall victims to colitis.

There is a class of cases that call for both prophylactic and active treatment. These are the cases that all physicians meet almost every week of life. About the first symptoms are convulsions, which are (as has already been stated) almost always due to an overloaded stomach with food that the baby cannot digest; and I have learned not to believe what the mother or nurse has to say about the child having had nothing to eat. The proper prophylactic treatment in many instances will prevent a severe case of colitis and I like to call it prophylactic treatment, which is as follows: relieve the convulsion by giving hot mustard bath and keeping cold pack to head until patient relaxes, then unload the stomach by giving an emetic or using a stomach pump. I must repeat that many times the parents will insist that the baby has not had one thing to eat that it should not have had, but while they talk give the child a good big dose of syrup of ipecac; in just a few moment you will almost without exception prove to the distracted parent one or two things; either they are entirely ignorant of what the child has been eating or else they are just common liars, because when the child begins vomiting, you can usually point out green plums, half-ripe bananas, green fruit of all description, peanuts, turnip greens and almost anything found in the average grocery store.

After this is done, I make it a routine practice to give the patient a high enema of either normal saline or alkaline solution,

then you have about done all possible to prevent a severe ileocolitis except do not give them the old treatment of calomel and castor oil to sweep them out, for if you do, you will succeed in sweeping many of them into the grave yard.

The treatment of this disease has changed a great deal during the past few years from that of medication and starvation to feeding and watering. Maybe you do not like the term watering, but just call it anything you want, but when the system calls for water, there is nothing that will satisfy but water, not even whisky.

A baby that has been well and taking at least one quart of milk per day, about eighty-seven per cent of which is water suddenly becomes ill with diarrhea which soon dehydrates it and just when we need fluids to dilute the toxins, they are stopped, because the infant gets most fluids through the milk. This is stopped and a little broth or rice water is given; the former of which acts as fine culture media for the bacilli that are present in some form in almost all cases and the second has but little food value.

In those cases of mechanical diarrheas which usually terminate in ileocolitis, it is well to stop all food for a few hours but this should not be continued for more than twenty-four hours. Then begin feeding and I like Dr. Wilson's idea of "beginning low and going slow;" that is, our milk formula should be about one-third milk and two-thirds water, but try and get sufficient fluids in to prevent dehydration; and gradually increase the milk formula until the baby is getting sufficient milk to take care of its caloric needs. I discontinue the sugar in these feedings until the patient begins improving, then add gradually. In many cases a protein milk serves best. Just here permit me to digress long enough to say that if we do not know caloric needs and values, we should not undertake to treat a child with colitis.

If it is impossible to get sufficient fluids by mouth, then supply them through the bowels; if this fails, resort to either hyperdermoclysis or still better give them intraperitoneally. This is a simple operation which can be done in the home. Give at least 200 c.c. every eight or ten hours as long as needed. Some still believe that strychnine, caffeine or camphor should be given as a stimulant, and these may be of value but fluids are our best stimulant and weak tea is fine for this purpose.

To summarize the treatment—First: Unload the stomach of undigestible material either by giving an emetic or using a stomach pump. Irrigate the colon with normal saline or sodium bicarbonate solution which serves a double purpose, first of controlling temperature and second, ridding the colon of retained toxins. Give plenty of fluids. It makes but little difference how we give them just so it is externally, internally and eternally. Feed the baby. Breast milk is best, but if you cannot get breast milk, give some formula of modified cow's milk, which should be boiled; in fact all milk should be boiled that is fed in artificial formulas.

Do not give strong laxatives especially calomel and castor oil. The baby may be given mineral oil which serves as a lubricant and aids nature in passing through the twenty-seven or twenty-eight feet of intestines harmful food that has gotten there and cannot be digested. The patient should be weighed every day when possible so that we can keep a check on loss or gain in weight.

The serums have not proven of special value, although some pediatricians report good results, but this must be limited to those cases where the laboratory findings will help to classify the cases that might be helped by serums.

Dr. Marriott is a strong believer in focal infection as a causative factor and no doubt it is in many cases and if so, it should have attention.

In conclusion, permit me to say that I know many of you will not agree with what has been said regarding medication, especially castor oil, but for fifteen years I gave as much calomel and castor oil as anybody and I am glad to say many of my patients got well in spite of my treatment, but if I've given you the wrong ideas, charge it up to Strong, Bloom, Royster, Mülleherrin, Wilson and many other Southern pediatricians.

During the past four years, I have followed the treatment as outlined in this paper and not a single death certificate is on file in Jackson against Joe Green from death caused by ileocolitis. Time will not permit a discussion of chronic ileocolitis in this paper.

DISCUSSION

Dr. R. A. Strong (Pass Christian): Mr. Chairman, my chance has arrived. You know as we say out here in "rum row," when Joe Green fired that shot across my bow this morning I thought I would have a good opportunity with him this afternoon. I will tell you frankly that I thought it over and I am not going to shoot at Joe Green so badly, because he has the last shot in this thing. He can tear me up. But I am going to hold one thing against him.

You have heard a very constructive paper and it reflects, without any question of a doubt, what I think would be the modern thought, and we certainly have had a world of thoughts on that particular subject.

Going back to 1837 you will find one French pediatricist, de Lord, I think his name was, who tried to classify intestinal disturbances, we will call them. He started by calling them certain things. I have a few notes here from the history.

We will jump down to a period a little later when the term ileocolitis and colitis is used, which represents a period fathered by the German pediatricist, Wiederhofer, who liked to classify his intestinal disturbances anatomically.

Then we jump to the bacteriologic era where we thought bacteriology was the cause of all disturbances. Then we jump down to Keller and Finkelstein who blamed the trouble on nutritional disturbances, advocating the high fat formulae, which was cut down to skimmed milk from whole milk, until now, I think, it is decided, "After all, what is the difference?" Now they are not working so hard on a classification as they are on the matter of treatment.

I think Dr. Green has certainly summarized the treatment very thoroughly. I want to emphasize the point he made concerning the giving of purgatives. First of all, you have a baby who has diarrhea and it is doing everything possible to dehydrate itself. If you come along with castor oil or any purgative and try to increase that peristalsis, you are going to contribute largely to the dehydration and therefore cause an anhydremia, a lack of fluid in the blood.

I think the whole thing can be summarized pretty well the same in the words the German pediatricist, Morrow spoke, three words, toxicose, exsicose and acidose: toxemia, dehydration, which in turn causes anhydremia and acidosis.

If you combine those three things you have done just about all you can do for the infant. The degree in which it exists depends entirely on the individual case. As Dr. Green has told you, you are going to combat the anhydremia or the exsicose, the dehydration, with as much fluid as you can possibly get in and get it in in every possible way, resorting of course to the intraperitoneal route of necessary, depending the child.

Alkalis: Select any one you want—bicarbonate of soda and insulin and glucose, well buffeted with glucose—and combat those three condition, toxemia, acidosis, and anhydremia or exsiccosis.

Dr. A. M. Harelson (Stringer): I am sure I am not competent to enlighten this body on the treatment of ileocolitis, and yet, there are some things about it that I think I have found out by experience that might possibly be worth something to somebody.

About ten years ago I became acquainted with the essayist, Dr. Green, and he and I together killed a good many of them down in that part of the country by using calomel and calomel, just as he was talking about. We met several times and we let a lot of our babies die promptly.

I have fully come to the conclusion since my association with him down there and our association together later in other places and with cases of this character, that the best thing we could possibly do for those babies in that condition was to properly feed them. Some may say that I am mistaken when I say that oftentimes the fever that results in a child suffering with ileocolitis is purely a hunger fever. If you will feed that baby properly, that fever oftentimes will drop right down and you will have less trouble with it from the fever standpoint.

It is often the case when you are feeding a baby suffering with ileocolitis that you will give it the bottle containing whatever preparation of milk you intend for it to have, lactic acid or protein milk, or whatever it may be, and the baby will nurse for a little while and then very suddenly quit and you think the baby has all it needs for that particular time. If you will have the mother take up that baby in her arms and lay its stomach on her shoulder and pet it a few times, it will belch a few times and you will find that that stomach was at least half full of wind and the baby didn't have half enough food in its stomach to take care of its requirements. When the baby belches off the wind, lay it down again and it will nurse just about as much again usually, and oftentimes that fever will drop immediately.

There is one other symptom I should like to mention in connection with children suffering from ileocolitis. They suffer considerably with tenesmus. I know that symptom becomes distressing. I don't know whether you have tried this treatment or not, and possibly you have or you may have something that answers the purpose better. The best thing I have found for tenesmus is to give very minute doses of atropin; for instance, take a 1/150 of a grain and put it in an ounce of water and give the baby a teaspoonful of it, and in twenty, thirty or forty minutes you will find in every instance that it is relieved of the distressing symptoms of tenesmus. If you haven't tried it, I think it is worthy of your trial. I give that information to you because it has been part of my experience.

Dr. L. S. Gaudet (Natchez): I am not a pediatrician, but I have had the pleasure of listening to Dr. Green's paper. What struck me so much was the simplicity of treatment, the simplicity of handling the case.

This morning I had the pleasure of listening to the treatment of pneumonia in children. I was also very much interested in that, because I was impressed by the small amount of drug treatment

that was given in those cases. As most of you doctors know, our mail every morning and every evening is filled with a great amount of material advertising most of the old remedies under new names at very much higher prices. I am very glad to see that most of us medical men are using less and less drug treatment.

Dr. Green made one remark that impressed me very forcibly, because I have been following up Dr. McImeroth's work in regard to ileocolitis and focal infections in connection with it. As I understand it, at the children's hospital in St. Louis when a child is brought in with an ileocolitis and it doesn't clear up in twenty-four or thirty-six hours under proper diet, then it is presumed that child must have focal infection of some kind and consequently the different specialists are called in and many cases have proven that the child has middle ear trouble.

My idea in rising to make these few remarks is simply to remind you of the fact that when you have a little baby who has some intestinal disturbance that doesn't clear up in twenty-four or thirty-six hours, do not neglect to inquire into the prime cause of such a condition. Possibly there may be some nasal condition, but particularly the ear.

Dr. Joe E. Green (Richton): I appreciate what Dr. Strong, Dr. Harelson and Dr. Gaudet had to say in the discussion of this paper. I tried to cut out everything possible and bring in the salient points that we may use in order to get our babies well.

If there is anything that Mississippi needs today in the medical line, it is more physicians who are willing to give more time to the study of feeding and treating sick infants. Let some negro break his leg and almost any doctor in town can and will give him first-class surgical attention, but too often a mother brings in a baby that is very sick from some intestinal toxemia due to improper feeding and that some physician will not take the time to work out a proper feeding formula for his patient, but instead, writes some prescription containing calomel, castor oil, opiates and bismuth, and instructs the mother to come back in a few days. This treatment is often repeated a few times and far too often results in the doctor telling the mother that "The Lord knew best was why her baby died."

We could easily spend two hours discussing this subject, but just having fifteen minutes, makes it impossible to do more than mention the salient points. I again thank the doctors for their discussion.

ALIMENTARY ANEMIA IN INFANTS
AND ITS TREATMENT.*

CECIL LORIO, M. D.,

BATON ROUGE.

There can be found in medical literature dating back to Hippocrates, descriptions of a condition, known then as chlorosis; showing that for many years, anemia, as a paleness or thinness (as they termed it) of the blood, has been recognized. Secondary anemia has long been discussed but only since the middle of the twentieth century has simple anemia found some part of its etiology in nutritional deficiencies. Alimentary anemia, *per se*, is rarely found in the present day medical text book with any lengthy detailed description, as of most other common diseases. So, for that reason, I think a rather superficial analysis of the condition is at this time most appropriate.

Alimentary anemia, otherwise classified as simple anemia due to nutritional insufficiencies, is a rather common condition, existing in the infant, usually before the age of two years and due to an improper balance of diet or rather a diet in which iron and coloring content is not sufficient to replace that excreted; and it is usually found in the child to whom other foods besides milk have been withheld for too long a period. The alimentary anemia described by Czerny differs from the generally accepted views of this type of anemia in that he attributes the underlying etiological factor to an abnormal metabolism resulting in the elaboration of acid products from milk and starches which are toxic to the blood forming paranchyma.

The goat milk anemia described by Brouwer needs only be mentioned, in that, withdrawal of goat's milk and substitution of nutritional foods will cause an immediate amelioration of symptoms. It is also true that in the Balkans, where quite a bit

of donkey milk is fed, similar conditions exist. The mild type of alimentary anemia is far more common than is ordinarily supposed, and as in other diseases there are degrees of severity, but the greater number being of the mild type and usually unobserved.

Since the origin of alimentary anemia is problematical and since the consensus of opinion is that of a paucity of iron containing foods and lack of hygienic environment, it is but logical that we enter into some description of the two elements of the blood that are notably effected, that is, the red blood cells and the hemoglobin.

Experimental work on living blood cells by Sabin, has proven that the red blood cells develop from the mesenchyma cells which constitute the blood islands, and under the hematopoietic demands of an anemia these primitive cells are often swept into the circulation and their presence is indicative of a floridity of blood formation.

New erythrocytes are steadily being delivered into the circulation as a result of their growth in an inexpandable environment, and under normal conditions a definite ratio is established between blood formation and those emptying into the blood stream. For instance, in an anemia with an erythropenia and diminished hemoglobin, the condition upsets the ratio between cell formation and destruction and the organisms experiences a red cell intolerance to it and blood formation increases.

Until recently, the function of the red blood cells was thought to be that of transportation of oxygen and by which means the CO₂ was taken from the tissues and excreted by way of the lungs. But experiment has definitely established that the red blood cells act also as a buffer, by maintaining the blood plasma at a constant hydrogen-ion concentration, and more important in consideration of anemia is that they function principally as being the most effective means of water transportation of the

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body. And besides this, the red blood cells maintain a constant ratio between tissue CO_2 and plasma CO_2 .

These properties have been attributed to the red cells but in reality it is the hemoglobin with its iron and hematin content that functions principally in caring for the above metabolic functions of the blood, and it is when the need of hemoglobin is urgent that the stimulus maintaining blood formation as its constant high level probably expresses itself.

It is now thought very improbable that after the mature red blood cell enters the blood stream it can increase its hemoglobin content, as it has lost its embryonic structure; so that, in anemic patients, we must make it possible for new cells to appear in the blood stream with more hemoglobin and not depend on the old cell increasing its content from the blood plasma.

To treat effectively these anemias it is necessary to consider the elements of hemoglobin; that substance which is the coloring matter of the red blood cells and which properties are responsible for the many functions of the red blood cells. It is composed principally of two (2) elements, hematin and globin.

The globin is protein and the hematin is the pigment plus iron (being chemically and biologically related to chlorophyll, the coloring matter of plants) and when taken into the body as a food is termed the pigment complex or "pyrrol complex," and its ultimate fate is bile pigments or hemoglobin or urochrome.

The hematin is derived from milk fat in bottle fed and breast fed infants, and in older children from such foods as beef juices, egg yolk, vegetables and to a small extent in cereals.

The iron (which seems to be of such importance in avoiding alimentary anemia), received by a child during the first half years, consists principally of the with-

drawal from the storage supply of the liver, for it is during the last three months of pregnancy that the foetus stores up in the liver sufficient iron to amply care for the hemoglobin metabolism in the breast fed infant for about six months. Breast milk contains 1.5 mgm. of iron per quart as compared with cows milk which contains only .2 mgm. per quart. When breast fed, the iron storage is not drawn upon nearly so rapidly as in the artificially fed child. Other supplies of iron and hematin must be available to prevent anemia. In this condition the liver functions principally. Only during the last three months of intra-uterine life does the embryo begin to store iron. This explains the cause of twins, or single babies who are born prematurely, being often anemic, as they do not have the full benefit of the liver as an iron storage.

This condition described by the French authors as oligosideremia offers good prognosis and responds quickly to administration of iron.

From the above, it is but logical to conclude that, as an infant reaches the age of 8 to 10 months, when its growth is calling for an increased amount of hemoglobin elements, and supply about this time has become very scant and no articles of diet with these elements are given in sufficient amounts, an anemia will inevitably develop. A bottle fed baby for twelve months without supplementary iron foods will usually develop some degree of alimentary anemia. Breast fed babies are relatively free of this because the iron content of human milk is sufficient to replenish the depletion. Theoretically, the amount of iron intake daily, to cover the needs of the blood growth and to replace the iron which is constantly metabolized and excreted for a one year old child, is from 2 to 2.5 mgm. per day. This is probably somewhat higher than the actual needs and takes into consideration that only 60 per cent of iron consumed is actually used.

When the hemoglobin reaches such low limits as 30-40 or 50 per cent the appetite

usually diminishes and such a child may get into a dystrophic stage and remain as such until the hemoglobin is increased; gastro-intestinal upsets are not infrequent and often are the beginning of a rapid decline in the child's general condition.

In alimentary anemia one can differentiate various grades of pallor which is easily and clearly seen in the face and well portrays in general the degree of pathological blood changes. The most marked form of anemia gives the infant a bluish, transparent appearance, or a waxy, yellowish color. This picture is accentuated by the outstanding bluish veins especially prominent on the skull and abdomen. The ears are transparent with hardly the vestige of a rosy hue and mucus membranes are very pale.

In the treatment of alimentary anemia it is necessary to consider several factors.

Heretofore too little attention has been paid to the factor of diet in regeneration of blood. Whipple and his associates have found that the best regeneration of blood was in those who were on a mixed diet, the most potent factors being chicken gizzards and livers, pig heart muscle, kidney of pig and beef, egg yolk, spinach, beef juice and, to a lesser extent, cereals. A diet rich in carbohydrates and with very little protein permits only a slow regeneration curve in the adult, and it is this that accounts for the so often seen anemic infant who has been fed on condensed milk over a long period of time without supplementary feedings. High carbohydrates conserve in the body certain protein factors and so prevent their entering into formation of new hemoglobin.

As has been pointed out, whenever an anemia has been allowed to remain at a low level for any length of time any factor that influences the regeneration curve is put to the hardest test. Such cases therefore of alimentary anemia as have been present for a considerable time will respond only slowly to dietetic treatment and, in cases

of sufficient severity, we must resort to more drastic measures.

General hygienic measures are fundamental in the treatment of anemia. The stimulating effect of ultra-violet rays on metabolism especially on that of the bone marrow is well recognized, so that fresh air, with extensive sunlight or mercury vapor lamps properly applied, are definite stimulation to the blood forming tissues and also an aid to better functioning of all the body organs. The debilitated functions as found in anemia are exhilarated; nutrition is definitely improved; activity of secretions is marked; and the internal organs are better oxygenated.

The use of drugs (iron, arsenic, principally) is a time honored custom and it has been believed and is now conceded by some, to have a definite and beneficial place in our armamentarium in the treatment of anemia, but experimental evidence tends to prove more and more their uselessness.

Whipple and his associates in a carefully planned series of experiments with the use of iron and arsenic, call attention to the negative influences upon the curve of hemoglobin regeneration. Blands pills have been found to be practically inert as compared to different foods such as liver, beef, spinach or egg yolk.

Fowler's solution by mouth and sodium cacodylate subcutaneously gave only a very slow rise in the hemoglobin curve.

Concluding from his experiments, Whipple says that no drug has been tested which can compare with the food factors in stimulating a rapid regeneration of hemoglobin in anemia, and that his experiments give no support to the time honored custom of administering iron and certain other drugs in conditions of anemia. So that, from the above discussion, it is but right to conclude that inorganic iron and arsenic have but little influence on anemia. At times, however, some benefits may be derived when they are used in conjunction with organic iron, in which cases Bass and Danzer rec-

commend the use of saccharated iron carbonate 30 to 60 grs. daily.

The most efficient treatment is the transfusion of blood. This is obvious, because, when blood is put into the circulation, the reserve that has been missing throughout the course of anemia is supplied, and thereby the burden of the blood formation is not so imperative from the hematopoietic centers and at the end of 20 to 30 days the blood forming centers are in better condition to supply mature cells, provided the proper stimulus is given during the interval. It sometimes happens that one transfusion does not suffice and several may be necessary in order to allow the equilibrium to be maintained between the destroyed and newly formed red blood cells.

In the administration of blood from donor to recipient it is necessary either to type the bloods, using either the Moss or the Jansky classification, or to use the method of cross agglutination. Cross agglutination of donor's to recipient's serum and vice versa is the only absolute reliable method because Guthrie and Huch of Johns Hopkins in 1923 demonstrated by direct tests and by absorption experiments the existence of a third iso-agglutinine and a third iso-agglutininogen in human blood making 27 groups possible in contrast to the Morse system of 4 groups 1-2-3-4. So that cross agglutination would be the only positive method of determining the compatibility of bloods.

The agglutins present at birth are usually of a low concentration and increase gradually during infancy up to the age of 2 years when the adult stage is reached. Only in 20 per cent of cases in which cells agglutinate does hemolysis occur, and even in infants under 2 years where the strength of the agglutins are unknown the chances of hemolysis are only 1-1000. So that in an emergency, blood may be given (of course with 1-1000 risk) to an infant without examinations for agglutins. This applies principally to those under 6 months

to one-year. Transfusions may be either by the direct or citrated method. The citrated method is by all means the simplest and can be done with only the aid of a nurse. Intravenously the veins of choice are the external jugular and the fontanell, either route being a fairly simple procedure. In doing the citrated method it is necessary to have the blood diluted with a minimum of .25 per cent citrate to inhibit coagulation.

To the pediatrician, by far the most important contribution in blood researches is the work of Sansby in 1923 who showed by experiments on rabbits that the red blood corpuscles of citrated blood introduced into the peritoneal cavity are absorbed quantitatively without disintegration of the red blood cells into the general circulation and that this procedure can be carried out without harm. The red blood cells are absorbed through the lymphatic vessels which establishes drainage between the peritoneum and the cisterna chيلي. Cross sections of the peritoneum of the diaphragm shows the red blood cells being taken up between the endothelial cells.

The serum of the blood is rapidly absorbed but it may take a week before all of the red blood cells are completely removed from the peritoneal cavity.

It is thought not necessary to determine agglutination for intraperitoneal transfusion though in my opinion it would be more nearly safe to do so.

The accepted maximum dose of 15 c.c. of blood to pound of body weight, should permit an increase of something over 2 million red blood cells per c.c. of blood and an increase of 20 to 30 per cent hemoglobin.

The simplicity of the technic, the assurance of absorption and the favorable results, warrants its use in many cases. Intraperitoneal transfusion in my hands, so far, has been very satisfactory and my choice method of administration wherever the case is of such a nature. Its use in the

treatment of alimentary anemia supplemented by specific foods with sufficient iron and hematin content has proven to me to be most satisfactory, with results which are surpassed by no other course of treatment in present use.

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DISCUSSION

Dr. R. T. Lucas (Shreveport, La.): I think Dr. Lorio has covered the subject too well for me to try to criticize it except to thank him for bringing it to the attention of the section.

I think in the feeding of children, babies from the ages of about six or eight months to five or six years, that the balancing of proteins and carbohydrates is often not what it ought to be. It may be an absence of the iron content that makes it apparent. In these anemias I put children on scraped beef, starting rather early, or merely increasing the protein percentage of their food by giving eggs, liver and any other kind of meat the child will take, but in some cases there is nothing you can do for them that will give quite as remarkable and prompt results as blood transfusion will give.

I have not had any experience with blood intraperitoneally. I have been a little reluctant to use it that way. I do use diphtheria antitoxin by that route. Unless it is an emergency and

you can't get the blood in any other way, I don't believe we ought to go into the fontanel. It is easy enough to withdraw blood from the fontanel, and of course you can give a transfusion by that route. It is a very simple procedure, but I feel some hesitancy in going near the brain tissue if I can reasonably avoid it. I frequently use blood intramuscularly with satisfactory results.

The administration of blood is a very valuable procedure, and I think in a large measure the use of blood as a stimulating agent to get your patient back where he can take care of himself when in a very low state, is undoubtedly a life saver in a large percentage of cases.

Just before coming I had a patient with pyloric stenosis, who was in bad shape. In the absence of some blood given about twelve hours previous to operation I don't believe the child would have survived. As a matter of fact the child did respond very promptly.

I think Dr. Lorio is to be congratulated on bringing us such an important and pertinent subject.

Dr. C. J. Bloom (New Orleans, La.): I am sorry I have missed the main part of the discussion. I had an opportunity to read over the paper of Dr. Lorio. I thought it would not be a bad plan to mention casually something that might be rather confusing to most of us. In very young children, especially the type described in alimentary anemia, we must consider what would normally be the blood picture. We know that the hemoglobin in a child two years of age seldom exceeds 80 per cent normal, and that at times we are quite surprised to find just how low the red count is, which very often runs between 4,000,000 and 5,000,000.

This type of alimentary anemia is met with in all cases, I mean those that are fed both artificially and from the breast. Whether it is due potentially to an unbalanced diet, although years ago we considered breast milk a rather balanced diet, we know today there are so many influences that would change the content of milk, both mothers' milk and cow's milk, that we have been prone to add, either in the way of complementary feedings or supplementary feedings, to the diet of a child as early as the fifth or sixth month. We give fruits as early as the first month.

I know of no plan of treatment that gives us quite as good results as the use of blood in relieving alimentary anemia. I have used various preparations of arsenic and iron. I have gotten the best results through the use of iron and quicker results with solarson than with cocodylate of soda. I think the best and quickest plan of

treatment is the use of whole blood. In these cases I generally give from 15 to 30 c.c.'s of blood. I do not citrate it. I do not have to type it. Give it under the skin in the flanks of the abdomen, either once or twice weekly until the hemoglobin and the red count show an appreciable increase.

I have been very much interested in Dr. Lorio's paper and I am glad he had an opportunity of bringing it before the attention of the members of our society.

Dr. J. E. Bailey (New Orleans, La.): It was not my purpose to offer anything on this excellent paper of Dr. Lorio's when I came in, but he mentioned quartz light therapy, and I couldn't resist the temptation to make a plea for it.

We have used it over a period of six or seven years in the treatment of the secondary anemias, and we have used it with very gratifying results. We can always expect, and usually get increase in the red blood cells, in platelets, in the hemoglobin, and an increase in the phosphorus and calcium content of the blood. The technic is simple. There is nothing complicated to it. You can all use it, and the results are usually gratifying. It is well worth trying in these anemias, and I am sure you would be well pleased with the results.

Dr. F. M. Johns (New Orleans, La.): I should like to compliment Dr. Lorio on his paper in general. I think we have a multiplicity of names with regard to the types of anemia. I should like to suggest that he change the title. I think the tendency these days is to complicate the types of anemia with names relating to the etiology and we have entirely too many.

I think this form of secondary anemia is incidental to an iron deficiency.

I would like to call attention to one of our scientific exhibits. Dr. Wintrobe has made a notable study with regard to the estimation of hemoglobin. By a rather careful and elaborate method he has been able to show that the estimation of hemoglobin in anemias by the various colorimetric methods vary so that we can hardly tell by any of the ordinary instruments whether we are dealing with a primary or secondary type anemia. With one method we will obtain a percentage of 70 per cent, and with another method we may obtain 10 to 20 per cent more or less. I believe that the average determination of hemoglobin is extremely inaccurate, and that in the differentiation of anemias more care should be given to this very important point than to merely soak a piece of filter paper with a drop of blood and match it against any set of red colors that may be furnished often by patent medicine vendors.

In border line cases especially, I would urge you to pay more attention to the method of determining all of the factors needed in differentiating a type anemia and which includes not only the hemoglobin but the erythrocyte count, color index, morphological and staining characteristics of the cells and their resistance to hypotonic salt solutions.

Dr. Cecil Lorio (Baton Rouge, La., closing): In regard to Dr. Johns' request that I change the title, I don't think it would be quite possible to change it and yet get it before the pediatricians in any other way, because it is a condition called alimentary anemia in pediatrics, and in a recent Journal it is called alimentary anemia due to sprue. Of course, it is confusing, but at the same time I don't think it would be possible to change the title. I think we will leave it to the author of some book to change the title.

I want to thank very much the doctors that have discussed my paper, and for the discussion they have given.

GAS ANESTHESIA IN ORAL, LARYNGEAL, LUNG AND OCCULAR SURGERY.*

ANSEL CAINE, M. D.

NEW ORLEANS.

From the standpoint of gas anesthesia these cases present difficulties that must be overcome to be successful. The difficulties are not the same as for laparotomies, where relaxation is the bug bear, but are concerned with the administrative side.

It can be readily seen that anesthesia, when a mask covering both the nose and mouth can be used, presents a different picture from anesthesia, when the mouth or nose is uncovered. We shall endeavor to show how these problems have been solved in simple ways.

In chest surgery, where the pleura has been opened, there is collapse of the lung unless it is held against the chest wall by adhesions. In man, oxygenation can usually be maintained with one lung, but this is not satisfactory, either from the surgeons or anesthetists point of view. Unless

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

the aim of the operation is to collapse the lung, collapse of the lung is not desirable. It is possible to maintain inflation of the lung by increasing the pressure under the mask to the point of maintenance of the lung against the chest wall. This is done under vision and when the lung is properly inflated the pressure is kept at that point. This is done by closing the expiratory valve to the point where it takes just the required pressure to lift it, and the required pressure is determined by the pressure necessary to keep the lung at the desired level in the chest.

Not nearly so simple is anesthesia in throat, laryngeal and tracheal surgery. Here the mouth is open or the larynx or trachea is open. Drs. Arthur Guedel and Ralph Waters have designed intratracheal tubes, having a tissue rubber inflatable bladder surrounding it near the inserted opening. A very small tube connects with the inside of the tissue bladder. and, when the tube is inserted into the trachea the bladder is blown up, thus preventing a leak around the tube and making the tube of the trachea continuous with the intralaryngeal or tracheal tube that has been inserted. Then anesthesia becomes a simple problem again.

This tube is often in the way in throat operations, but, when used to them, operators seem not to be bothered. The insertion of the tube requires some little skill as well as speed if an interrupted anesthesia is to be maintained.

For oral surgery the problem is more simple, and has been made very efficient. A device for delivering the gases into the pharynx, just at the opening into the larynx, is what is needed. Others will work, but Dr. McKesson made me one, improving on my idea somewhat. Soft rubber tubes, of as large caliber as possible, are used, and are attached to leads from the main hose from the apparatus. An expiratory valve is very desirable. After anesthesia has been induced in the usual way with the mask, the mask is quickly removed from

the hose, and this attachment substituted. The tubes, which have been previously well lubricated, are quickly inserted through the nose, pledgets of cotton seal the outlet around the tubes at the external nasal meatus, the mouth is opened and the gag inserted, the tongue is pushed back into the throat against the tubes and gauze packs effectually prevent oral breathing. As much dental work as is desired can now be done. In the same way we anesthetise for resection of the jaw, removal of a portion of the tongue or of the lip, cauterization of the mouth, etc.

Where the nose is to be operated on, we use the device of Dr. McKesson designed for oral administration. This is all right provided the patient does not vomit.

When the eye or frontal sinuses are to be operated we use tubes as for oral work, but the attachment is different, making it possible to get out of the way of the operator entirely. We have found this method of anesthesia very satisfactory, even over long periods as in operations for squint.

DISCUSSION.

Dr. Homer Dupuy (New Orleans): One would expect such a master in anesthesia as Dr. Caine to keep moving along progressive lines. The Caine-McDermott apparatus, the first of its kind, has proven invaluable in our surgery of the head. The many modifications testify to its intrinsic merits. Many technical difficulties surround oral surgery. It is encouraging to learn that Caine is still trying to facilitate our work by bringing gas anesthesia to our service through his more recently constructed nasal apparatus. It certainly seems indicated when ether is contraindicated.

Dr. Ansel Caine (closing): I haven't anything to say, Mr. Chairman, more than I have already said.

Question: In sinus work of the young, where you are forced to use ether and you have such a great amount of bleeding, noseema, and constantly have to pack off or else have to use a very small suction tip in order to attempt sinus work, I should like to know something about the use of the bronchoscope and how you would use it with this apparatus.

Dr. Caine: You can't use a bronchoscope unless you depend on those two little tubes, with the mouth wide open and blow the gas through.

You can't use a bronchoscope. The gas forms a wave just as you see it on a hot day when the air is rising over a cotton patch. The ether is hard to see because it forms a wave, and gas does the same thing.

For work in the antrum and on the frontal sinuses, it is very easy with this little mouth-piece and these tubes.

I thank you very, very much. I am sorry I wasn't able to give the other paper because it would have been more interesting.

THE PLACE OF ETHYLENE ANESTHESIA.*

JAMES T. NIX, M. D.

NEW ORLEANS.

Martzooff, in *Surgery, Gynecology and Obstetrics*, August, 1928, page 186, says, "Surgical anesthesia is an integral part in operative technic . . . The correct employment of ethylene—carbon dioxide-oxygen mixtures with minimal amounts of ether is destined, I am certain, to lower mortality."

It is the object of this paper to present to the Louisiana State Medical Society:

1. Personal testimony in favor of ethylene as a general anesthetic.
2. To offer a summary compilation of the views, favorable and antagonistic, of others.
3. To draw conclusions after a careful study and analysis of the statistics of ethylene, here and elsewhere.

In doing so the subject will be handled from the following angles:

1. A review of the anesthetics at Hotel Dieu, New Orleans.
2. Personal experiences with its use.
3. Evaluation of the opinions of others determined by
 - (a) Search of the literature.
 - (b) Information secured by private correspondence and from the an-

swers to a questionnaire letter that was sent to 100 hospitals in this country.

REVIEW OF THE ETHYLENE ANESTHESIAS AT HOTEL DIEU, NEW ORLEANS.

There has been no immediate mortality from this anesthetic, and only one case where ethylene might be considered as a factor in causing death, although after investigating this case, it is my personal belief and that of the surgeon in charge that ethylene played a very unimportant role, if any at all, in the fatality. Ethylene has been used over 7,000 times at Hotel Dieu since March, 1924.

In 1924 only two surgeons used the anesthetic. In 1928, more than eighty employed the gas one or more times in approximately 3,068 operations. During the past year, four or five 2,800 gallon tanks of ethylene are used every month as compared to four gallons for 1927, three for 1926, one and a half for 1925, and one for 1924.

Although the total number of operations at our hospital has remained practically the same during the last five years there have been no explosions because of the static spark. One inconsequential accident occurred when the mixture beneath the sheets of an operating table caught fire as the cautery was being used. At the time, however, the gas had been turned off, and no harm resulted.

During the month of February, 1929, in 89 per cent of the operations ethylene was given, and in 72 per cent of them ethylene and oxygen without other supplement was given.

Whenever the choice of an anesthetic is left to a house anesthetist, ethylene and oxygen is used, ether is only added in a small percentage of these cases, and in such instances the proportion of ether compared to ethylene is relatively insignificant.

In the obstetrical department at Hotel Dieu ethylene has been given three or four

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hundred times, although the exact number I have not determined. It is the anesthetic of choice for normal labor. When complications present, it is usually substituted by ethylene and ether, ether, or chloroform. The Gwathmey synergistic rectal anesthesia is seldom employed.

PERSONAL EXPERIENCE.

The author's personal opinion has not changed from that given in the article read on October 22, 1928, before the Orleans Parish Medical Society, although 738 additional anesthetics of ethylene and oxygen have been used, the total numbering well above 2,000.

I shall again direct your attention to a few points.

1. Explosiveness of dilute mixtures is admitted and recognized everywhere. Nearly all explosions have been caused by static electricity which can be safely overcome.

Experiments by the General Electric Company at the Presbyterian Hospital in Chicago showed two means of combating the static spark, one by raising the humidity, and the other by the careful grounding of apparatus in the operating room.

In New Orleans and places similarly situated geographically the static electricity in the atmosphere, even in the the coldest weather, never produces a spark because of the high humidity. Therefore, this one great problem of the static spark and the unavoidable explosion is eliminated.

Experiments have shown that whenever the humidity is 50 or above the danger of ethylene explosions from the static spark is practically nil. In the Annual Meteorological Summary of New Orleans for 1928, furnished by the Weather Bureau, United States Department of Agriculture, and compiled by Dr. Isaac M. Cline, the 7 A. M. humidity of New Orleans is never less than 78 and is usually above 82. The lowest humidity is reached about noon. The lowest recorded during the last year was 53; the

average, however, is above 60. At 7 P. M. the average humidity is about 70. Therefore, the fear of explosions from this source is negligible.

Some men use the cautery in the operating room. I do personally, but only for severing an appendix stump. At this time the anesthetic is turned off, the windows are raised, a fan is usually turned on, directing the gas away from the cautery, and only a large, well ventilated room is employed.

2. Relaxation the equal of ether and chloroform cannot be secured at all times. Satisfactory surgical relaxation, sufficient for 90 per cent of all abdominal operations can usually be obtained.

A preliminary hypodermic of morphin and atropin is always given. In a few instances a small percentage of ether is given during exploration, or effecting the delivery of a viscus or in closing the incision. The amount of ether given is minimal, seldom more than a drachm.

The addition of a local anesthetic is practised by some and is a distinct aid when employed. Dr. George W. Crile, probably the largest user of nitrous oxide in the world, many years ago simplified the technic of closing abdominal incisions, especially of the upper abdomen. Local anesthesia is combined with nitrous oxygen analgesia to secure relaxation. Interrupted figure of eight sutures are used going through all layers of abdominal wall beneath the skin, the small loop of the eight being innermost and catches up peritoneum and possibly a small bit of muscle, if the peritoneum has a tendency to tear. These sutures are placed about one-half inch apart in the length of the incision.

At the present writing, March 21, 1929, there are on our service at Hotel Dieu one cholecystostomy (a female weighing 270 pounds who had an acutely infected gall bladder with stones), one cholecystectomy

for chronic cholecystitis, one posterior gastro-enterostomy for extensive malignancy at pylorus, a nephrotomy with drainage of kidney pelvis due to a blocked ureter, three appendectomies with drainage for suppurative appendicitis, one a child three years old, and one bone graft for an ununited fracture of the tibia, four years' duration. The gastro-enterostomy was on the table two hours and twenty minutes. In this instance alone ether was added for ten minutes while the stomach and jejunum were being coapted. Less than two drachms of ether was used. The patient was awake and spoke to the anesthetist before leaving the operating room. All of the others received only ethylene and oxygen anesthesia.

The patient with the acutely infected gall bladder and stones presented evidence of a toxic nephritis on the day of the operation. She was operated as an emergency. Urinalysis on the same day four hours post-operative showed 6 per cent albumen. The nephritis was incited probably because of the acute infection and the fact that she had been under the influence of morphin for pain the forty-eight hours previous. Mrs. P. had a normal parturition three months before. During the entire pregnancy at no time was there evidence of nephritis or hypertension. An acute suppression of urine appeared on the fourth day, and only after exhaustive measures of treatment were instituted, including especially an intravenous drip of 5 per cent glucose solution, did the kidneys again function. A specimen of urine by catheter on the fifth day showed 25 per cent albumen. The patient was profoundly shocked, the blood pressure being too low to be determined.

The cholecystectomy and nephrotomy presented no difficulties on the operating table, post-operative convalescence in each instance being simple and uncomplicated.

High temperature following ethylene anesthesia in the summer months has not been

our experience. This hyperpyrexia during the summer months does occur, but I would think it more frequently follows ether anesthesia.

For prolonged anesthesia, ethylene is the ideal inhalant anesthetic in our opinion, and the expression of other recorded testimony seems to confirm our view.

On the other hand, the ear, nose and throat physicians associated with us do not use ethylene in their work.

In my personal experience I have seen one immediate death from ether, many probable indirect ones, and two rather severe explosions when the fumes of ether were ignited by the spark of a suction machine. I have seen no immediate nor delayed deaths from ethylene.

SUMMARY REVIEW.

The criticisms of ethylene and oxygen anesthesia have been most satisfactorily answered and the objections overcome by able anesthetists and scientists throughout North America, and surely there is no greater authority in anesthesia anywhere than we have in New Orleans in Dr. Caine, whose criticism of my previous paper you have already read.

I shall not burden you with the opinions of many others but shall only give a few quotations from those who apparently have had the greatest experience.

A letter from Dr. Arno Luckhardt dated October 30, 1928, reads as follows: "In upper abdominal work this anesthetic is not always uniformly successful. In such instances small quantities of ether are used together with ethylene in order to give a more perfect relaxation; this amounts on the whole to not more than a few teaspoonfuls of ether. Ordinarily, however, ethylene oxygen suffices."

Quoting from a letter of Dr. John B. Lundy, the Mayo Clinic, "In 1927 ethylene was used in 33.5 per cent of the total anesthetics. In one of every three anesthetics in which ethylene was used, ether was add-

ed. Ether was usually added for intra-abdominal operations . . . Ethylene is non-toxic and without marked effect on ordinary blood pressures."

George A. Johnston, in the *California and Western Medical Journal* of August, 1927, 6:216-218, states, "Ether is sometimes necessary for complete relaxation, one ounce of which will suffice for two hours."

Sanford Rosenthal, of the department of Pharmacology, McGill University, Montreal, Canada, in *Anesthesia and Analgesia*, September-October, 1928, in a paper entitled "The Effects of Anesthetics on Hepatic Function" after a careful study and comparison of ether, nitrous oxide and chloroform concludes, "Ethylene would seem to be the anesthetic of choice for operations in severe liver disease."

Dr. Luckhardt, in *Anesthesia and Analgesia*, January-February, 1928, concerning ethylene shock says, "No such thing exists." He has taken ethylene over two hundred times with no untoward results. So called thyroid deaths he believes to be only a surmise.

G. Leonard Lillies of Melbourne, Australia, in *Anesthesia and Analgesia*, July-August, 1928, page 205, states that more than half of his patients receive ethylene and oxygen without ether. Others have varying small amounts of ether. He reports twenty-three cholecystectomies and gastrectomies, six gastro-enterostomies and one cholecystostomy with ethylene and oxygen.

Hugh Cabot of the department of Surgery, University of Michigan Hospital, Ann Arbor, Michigan, in *Annals of Surgery*, August, 1927, reported 11,607 cases without immediate mortality. In his conclusion he stated, "In our practice it has practically pushed nitrous oxide from the field and will, we believe, for ordinary surgical practice, supercede it. It appears to be remarkably free from danger, except that

possibly resulting from explosions. Occasionally for work in the upper abdomen it must be combined with other anesthetic aids."

The writings on ethylene are most voluminous, most of them extolling the many advantages of the anesthetic. Time prohibits me quoting from a larger number.

Concerning the questionnaires sent out, one hundred of them were mailed to the hospitals of Louisiana, Mississippi and Texas of one hundred beds and over, and to those of Chicago, Boston and New York. Fifty-one answers have been received. In two hospitals, only medical cases were handled and consequently no inhalant anesthetics were used. This reduces the number to forty-nine.

In eighteen of these ethylene was not used at all because of increased fire risk, explosiveness and cost. The charity institutions of the large cities seldom use ethylene. In Cook County of Chicago and Bellevue of New York and New York City Children's Hospital it is not used at all. It is very pleasing to note, however, that in our own Charity Hospital at New Orleans ethylene is given to all patients requiring this anesthetic, numbering 7.7 per cent of the total anesthetics given. Ethylene and oxygen with ether is given in .8 of 1 per cent. Comparing these with the statistics of the large institutions of charity of North America this is a most exceptional and creditable showing.

In thirty-one hospitals where this anesthetic is employed there have been no immediate deaths. In two hospitals an indirect death had probably resulted from ethylene; the reason in one instance is not given, in the other it was the result of an explosion.

Of the forty-two private institutions, fourteen use ethylene and oxygen as the anesthetic of choice in general surgery, seven of these being hospitals ranging from 250 to 500 beds; notably, Michael

HOSPITAL SUMMARY

Hospital	Beds	I. A.	I. M.	Where used Up. Abd.	Lo. Abd.	J.	Ext.	Not Used	Ob- stet- rics	% C ₂ H ₄	% Ether	Surgery	Anesthetic of choice Obstetric s
N. E. Deaconess Boston	175	No	No	Rarely	Rarely	Yes	Yes	E. N. and T. Cautery G. U.	.....			Ether	.....
Fifth Ave., N. Y.	295	No	No	Occasionally	Occasionally	Yes	Yes	Cautery E. N. and T. X-Ray	Yes	Frequently	Frequently	Ether	Ethylene and Oxygen
Presbyterian, N. Y.	256	No	No	Occasionally	Occasionally	Yes	Yes	Cautery E. N. and T. X-Ray	Yes	Frequently	Frequently	Ether	Ethylene and Oxygen
Post-Graduate Hospital, N. Y.	410	No	No	Occasionally	Occasionally	Yes	Yes	Cautery E. N. and T. X-Ray	Yes	Frequently	Frequently	Ether	Ethylene and Oxygen
St. Luke's, N. Y.	417	No	No	Occasionally	Occasionally	Yes	Yes	Cautery E. N. and T. X-Ray	Yes	Frequently	Frequently	Ether	Ethylene and Oxygen
J. B. Murphy, Chicago	101	No	No	Yes	Yes	Yes	Yes	Cautery Tonsils	Some- times	35	55	Ethylene and Oxygen	Ethylene and Oxygen
Jackson Park, Chicago	140	No	No	Yes	Yes	Yes	Yes	None	Yes	40	40	Ethylene and Oxygen	Ether
Children's Memorial, Chicago	250	No	No	Yes	Yes	Yes	Yes	Cautery on chest Long op. Respiratory Interference	Yes	15	5		.....
USED LAST YEAR	DISCARDED THIS YEAR			BECAUSE OF EXPLOSIVENESS.	ALSO			TO INCREASED Open mouth op. Cautery	FIRE	RISK, LAST	YEAR'S REPEATED	REPORT FOLLOWS: N ₂ O, Oxygen and Ether	N ₂ O, Oxygen and Ether
Lenox Hill, N. Y.	345	No	No	Yes	Yes	Yes	Yes	Used in all cases	Yes	50		Ether	Ether
Mercy Hospital, Chicago	400	No	No	Yes	Yes	Yes	Yes	Tonsils. Occasionally G. B.	.....	15	5		
Alexian Bros., Chicago	300	No	No	In some cases	Yes	Yes	Yes			50	45	Ethylene and Oxygen	.....
Harris Hospital, Fort Worth	100	No	No	ETHER CHOICE					No	10	10	Ether	Ether

HOSPITAL SUMMARY

Hospital	Beds	I. A.	I. M.	Where used Up. Abd.	Lo. Abd.	J.	Ext.	Not Used	Ob- stet- rics	% C ₂ H ₄	% Ether	Anesthetic of choice
Presbyterian, N. Y.	256	No	Several pneu- monias	Occasionally	Frequently	Rule	Rule	Hemorrhoids. Gastric and neck work	---	40	60	Ethylene and Oxygen
Baylor U. Hos- pital, Dallas	412	No	No	Yes	Yes	Yes	Yes	Only where cautery near- er face than hemor- rhoids	Only in repair	85	50	Ethylene and Oxygen
Hotel Dieu, New Orleans	269	No	No	Yes	Yes	Yes	Yes	Cautery excis- ion. X-Ray room	Yes	75	2	Ethylene and Oxygen
N. Louisiana San- itarium, Shreve- port, La.	100	No	No	Yes	Yes	Yes	Yes	None	No	10	70	Ethylene and Oxygen
St. Luke's, N. Y.	417	No	No		Yes	Yes	Yes	Brain, N. and T. Splenec- tomies long hip manip- ulations	-----	30	10	N ₂ O, Oxygen and Ether
Hotel Dieu, Beaumont, Tex.	175	No	No	Yes	Yes	Yes	Yes	Cautery within 3 ft. of mask	Yes	16	4	Ethylene and Oxygen
Eye, Ear, Nose and Throat, New Orleans	66	No						Cautery. Eye.	-----	10		Ether
Our Lady of the Lake, Baton Rouge, La.	112	No	No	Yes	Yes	Yes	Yes	None	Yes	50	25	Ethylene and Oxygen
Michael Reese, Chicago	489	No	No	Yes	Yes	Yes	Yes	Electrical cautery, high fre- quency	Yes	75	25	Ethylene and Oxygen
Baptist Hospital, Abilene, Tex.	81	No	No	Rarely	Yes	Yes	Yes	Cautery Tonsils	Yes	50	40	N ₂ O, Oxygen and Ether

HOSPITAL SUMMARY

Hospital	Beds	I. A.	I. M.	Where used Up. Abd.	Lo. Abd.	J.	Ext.	Not Used	Ob- stet- rics	% C ₂ H ₄	% Ether	Anesthetic of choice
Lying-In Hos- pital, Chicago	260	No	No	.....	Yes	.....	.....	None	Yes	50	12½	Surgery Ethylene and Oxygen
Mother Calireni Memorial, Chicago	165	No	No	Yes with Ether	Yes with Ether	Yes	Yes	Cautery. N. T. and Mouth cases	Yes	25	50	Ethylene and Oxygen and Ether
Santa Rosa, San Antonio, Texas	321	No	No	Yes with Ether	Yes with Ether	Yes	Yes	Cautery	Yes	.....	.....	Chloroform
Augustana Hosp. Chicago	276	No	No	Yes	Yes	Yes	Yes	None	No	25	25	Ethylene and Oxygen
St. Francis, Monroe, La.	125	No	No	Yes	Yes	Yes	Yes	None	No	10	5	N ₂ O, Oxygen and Ether
Hospital by T. Abramson	100	No	No	Yes	Yes	Yes	Yes	Cautery	Yes	55	10	Ethylene and Oxygen
Charity Hospital, N. O., La.	1600	No	No	Yes	Yes	Yes	Yes	Cautery	Yes	7.7	.8 of 1	Ethylene and Oxygen

FOOT NOTE: In order to save space the following hospitals were deleted.

St. Anthony's of Chicago; Peter Bent Brigham of Boston; Harris Hospital, Fort Worth; New York City's Children; Cambridge Hospital, Massachusetts; Cook County, Chicago; Englewood, Chicago; Bellevue, New York; Southern Pacific, Houston; Beth Israel of New York; St. Mark's, New York; Woman's Hospital, New York; South Mississippi Hospital, Hattiesburg; City Hospital, New Orleans; Baptist Hospital, Alexandria; F. E. Willard Hospital, Chicago; Long Island Hospital, Boston; Massachusetts General Hospital, Boston; Vicksburg Sanitarium, Vicksburg. These hospitals had either never used it on account of explosiveness, or have used it too short a time to supply statistics. In several of the hospitals the note was made that the use of ethylene has been discontinued.

The column in the author's chart headed "contra-indications" was also deleted. Most of the hospitals said that there were no contra-indications to the use of ethylene. A few mentioned "when cautery is used" as a contra-indication.

Abbreviation "J" refers to joints; "Ext." to extremities.

"I. A." refers to immediate mortality; "I. M." to indirect mortality.

Reese of Chicago, 489 beds, Augustana Hospital of Chicago, 276 beds, and the Baylor University Hospital of Dallas, Texas, 412 beds.

This list includes Presbyterian Hospital of New York City, 256 beds, Fifth Avenue Hospital of New York City, 295 beds, Children's Memorial of Chicago, 250 beds, Mercy Hospital, Chicago, 400 beds, Alexian Brothers, Chicago, 300 beds, Baylor University Hospital, 412 beds, St. Luko's Hospital, New York City, 417 beds, Michael Reese Memorial Hospital, Chicago, 489 beds, Augustana Hospital, Chicago, 276 beds, and Hotel Dieu, New Orleans, 269 beds.

In only three hospitals of 250 beds or over was it not used, viz., Woman's Hospital of New York City, 260 beds, Lenox Hill Hospital, New York, 345 beds, and Harlem Hospital, New York City, 312 beds.

CONTRAINDICATIONS.

In all of the hospitals where obstetrical patients are given ethylene no contraindications are recorded against its use. In the Lying-in Hospital of Chicago and thirteen of the other hospitals from which statistics were received ethylene and oxygen anesthesia is considered the one of choice for obstetrics.

In surgery, of the ethylene users, most of the hospitals declared no contraindications to exist as to its use. Nearly all have combined it with ether in upper abdominal surgery. Nearly all prohibit the use of the cautery. Brain surgery, ear, nose and throat surgery and surgery of infants are often mentioned among the contraindications.

The total number of times ethylene has been administered in these hospitals must number over 100,000 times. Not one immediate death is reported, and a question mark is placed after one or two indirect ones. Can we say more of ether? Can we say more of any other inhalant anesthetics?

The static spark is not present under the normal atmospheric conditions of New Orleans with its high humidity. Explosions of an inflammable gas could not easily be produced from this source. The opposite condition prevails in the cold climate and low humidity of the North, East and West. A spark one inch in length is formed by simply inserting a metal key into the lock on the door.

Having now presented the status of ethylene anesthesia as I view it, the following conclusions seem fair and reasonably correct:

1. We do not pretend that ethylene will replace the local, regional, spinal and rectal anesthesia, for in our own service we employ the other anesthetics several hundred times a year.

2. We do believe, however, that ethylene and oxygen anesthesia is the inhalant anesthetic of choice for general surgery and normal obstetrics.

3. In operations requiring great relaxation at times other aids have to be supplemented; *e. g.*, local injection of the muscles and peritoneum and, in a few instances, a small amount of ether is necessary.

4. The surgeon and anesthetist must at all times work in complete co-operation and occasionally surgical technic, in particular the using of retractors, packing and the method of closure must be modified to meet anesthetic requirements.

5. In a small percentage of cases it is not the general anesthetic of choice; *e. g.*, brain surgery, the presence of the cautery, and in the roentgen-ray room.

6. Existing kidney disease is sometimes aggravated by the anesthetic, and likewise pulmonary infection.

7. In the South especially, where the gas can be administered by competent anesthetists, employing new and standard equipment, ethylene and oxygen anesthesia

is destined to be, if it is not already, the first anesthetic of choice for inhalant narcosis.

Before concluding I wish to read a letter from Dr. George Crile of Cleveland which I received too late to include in this report:

"Dear Dr. Nix:

I am interested in your questionnaire enclosed in your letter of March 4 which I cannot answer as we do not use ethylene anesthesia. We are still placing our main dependence upon nitrous oxid-oxygen analgesia and local anesthesia and upon spinal and sacral anesthesia in suitable cases.

Very sincerely yours,

GEO. CRILE."

If this can be said of nitrous oxid-oxygen analgesia and local anesthesia, it is my opinion that the same and more can be said with far less fear of contradiction if we substitute ethylene and oxygen for nitrous oxid-oxygen in Dr. Crile's letter.

I wish to thank the managements of the hospitals for their promptness and frankness in answering the questionnaires. I am especially indebted to Dr. Arno Luckhardt and Dr. Johnny Lundy for the assistance they gave on so many occasions in answering the questions I put to them.

For the giving of my anesthetics I express appreciation to Miss Agnes Grillet and the staff anesthetists at Hotel Dieu, New Orleans.

Last, but not least, I am grateful to the chairman of the section on Surgery and to the Louisiana State Medical Society for the privilege of presenting this paper.

DISCUSSION.

Dr. Jerome Landry (New Orleans): Luckhardt and Carter, in 1922, demonstrated the possibility of relieving sensibility to pain by means of ethylene gas, a substance long used as illuminating gas in railroad coaches. This was made possible by removing impurities, such as carbon monoxide, a deadly poison, and by the addition of oxygen to

the ethylene. To employ anything but the refined and carefully tested gas would be inviting disaster.

In Pittsburg not long ago a well known surgeon performed a major operation using ethylene gas, and had used it many times before, lost his patient, the result of the anesthesia. Next day another such death occurred. This particular product showed to contain seven parts of CO in a 1000 ethylene. This is merely mentioned to emphasize the necessity of using pure gas. On the other hand one institution alone reports 20,000 or more anesthetics without a fatality. Ranson and Cabot of Ann Arbor, Michigan, 11,600. Allen and Murray of Detroit, 2,750 and here, Dr. Nix reports his large number showing the safety of this agent.

The necessity of using an agent which inhibits cellular activity complicates the question of narcosis. We are compelled to lessen the durable lesions from their use as much as possible.

The chief anesthetics ether, nitrous oxide, ethylene-oxygen, are tried anesthetics and have been found satisfactory to certain degrees. These agents may and do give rise to lasting alterations in the cells, particularly of the liver and kidney. Nitrous oxide is a satisfactory anesthetic. Its disadvantage has been that the patient must be kept on the verge of asphyxia constantly and it is not apt to produce muscular relaxation. Ethylene has all the advantages to a more or less degree of the above mentioned, and is placed between ether and nitrous oxide. It gives a greater relaxation than nitrous oxide and avoids the objectionable asphyxia.

I may summarize the question as follows: Ethylene-oxygen anesthesia owes its popularity to a number of desirable properties, all of which are possessed by no one of the other available anesthetic agents. Ethylene causes an anesthetic state almost as profound as ether and more profound than nitrous oxide. Because of this fact the relaxation of the patient is more complete than with nitrous oxide, allowing more accurate and careful surgical technic. Since the relaxation is almost as profound as when ether is used, but without the disagreeable and prolonged subsequent ether sickness, ethylene is preferred to ether when the utmost relaxation is not required. Patients have been anesthetized for as long as 5.5 hours, with a maximum period of nausea and vomiting of one hour directly attributable to the anesthetic. In spite of the profound anesthetic state effected by ethylene administered in combination with oxygen, patients return to the conscious state within 2 to 3 minutes usually following removal of the mask irrespective of the duration of the surgical anesthetic state. Of a gaseous

nature and given in combination with oxygen as is nitrous oxide, ethylene, like nitrous oxide, is non-irritant to the respiratory passages, and is therefore not contra-indicted, as would be ether, in patients who at the time of operation suffer from an acute upper respiratory infection, acute bronchitis, or pulmonary tuberculosis; ether because of its irritant properties may predispose patients having these respiratory infections to a fatal post-operative pneumonia. Since any given surgical anesthetic state can be induced with more oxygen than is possible under nitrous oxide, general asphyxia of the cells is avoided, with its unfavorable consequences. Incidentally, the surgical and anesthetic sleep under ethylene is tranquil and more nearly like the normal sleep than is the case under any other anesthetic agent. Salivation and perspiration are less marked under nitrous oxide than under ether, and least under ethylene. Not only are the body fluids conserved as a result (for the patient may not be allowed to take fluids for some time after recovery from the anesthetic) but the absence of chilling resulting from the perspiration minimizes the danger of a post-operative pneumonia.

The subject of explosibility is a real source of danger and has been taken up by Dr. Nix and as he states if proper precautions this is not likely to occur. I would like to mention here an explosion of ether-opiates, I believe should be given not only for the purpose of helping the anesthesia but to relieve after pain on account of the rapid regaining of consciousness following this anesthetic. The odor is not contra-indicated.

Satisfactory relaxation can be maintained in most cases with a small amount of ether or local or regional anesthesia. The gas does not act as a cardiac or respiratory depressant unless pushed to profound narcosis. Ethylene can be used equally as well in the very young or the aged and debilitated. Repeated use at frequent intervals does not decrease its potency, nor does it increase the post anesthetic nausea and vomiting. It is for this reason that makes it an ideal anesthetic for normal obstetrics. It is not an anesthetic which can be employed except where a trained anesthetic is at hand and its cumbersome apparatus makes it impracticable for home work. One of the nice features of this anesthetic is to see your patient put to sleep in two or three minutes without any struggle and at the completion of your operation and removal of the mask he is awake at once. The cost is an item to be considered. The average cost is about $7\frac{1}{2}$ ¢ per minute. I want to thank Dr. Nix for asking me to open this discussion and to congratulate him upon the success he has had in the extensive use in this agent.

Dr. A. Oschner (New Orleans): I want to arise concerning the technic of inhalation anes-

thesia. The remarks Dr. Nix has made concerning the large quantities of ethylene that have been used within the last year prompt me to make the suggestion.

Dr. Ralph Waters, a number of years ago at the University of Wisconsin, devised an apparatus, the idea of which he got from the physiologists, which consists of a soda lime tank which he puts into the closed circulation. The soda lime will absorb the carbon dioxid, and it becomes necessary for the anesthetist to add only oxygen to his anesthetic. After anesthesia has been obtained it is unnecessary to use any more anesthetic gas. After about fifteen minutes anesthesia, which, according to Dr. Waters, amounts to about twenty-five cents worth of gas, he can run along for one and one-half to two hours without any more ethylene. The only thing which he does is to remove the carbon dioxid and add oxygen.

Dr. Waters introduced this method at the University of Wisconsin Hospital in Madison, and has saved the hospital from fifteen to thirty dollars a day in the price of ethylene. Not only is it a great economic saving, but a great saving as far as the surgeon is concerned. One can go into an operating room in which this anesthetic is being given and smell no ethylene. The possibility of explosion from cautery is also cut down. We never hesitated using a cautery with ethylene provided we didn't use it around the face. It is an entirely closed circuit. It is a very simple principle. The carbon dioxid is removed and the oxygen added, the ethylene remaining constant.

Dr. E. L. King (New Orleans): I merely want to say a word about the use of ethylene in obstetrics. I passed through the stage of ether and nitrous oxid, but since ethylene has come in the field I have found it is about the best obstetrical anesthetic. I would go further than Dr. Nix and Dr. Landry and say it is not only good for normal obstetrics, but for most abnormal work as well. I have used it in many cases of forceps, in Caesarean sections, and in several instances where I have done hysterectomy for ruptured uterus, and have found it exceedingly valuable. I have also used it in ectopic pregnancy without the addition of ether.

It does not give quite as much relaxation as ether, but that does not concern us when it comes to the question of Caesarean section or the average case of ectopic pregnancy. For podalic version it does not give enough relaxation, and then we fall back on ether, or fall back on the advice of our Dr. E. S. Lewis, or Dr. Potter of Buffalo, and use chloroform.

I have also used ethylene in breech extractions, and particularly in normal obstetrics. I have

given it in many cases over a period of several hours, giving the anesthetic intermittently, of course, with the pains—I have not hesitated to give it for three or four hours, and sometimes five hours, in a normal case, particularly in a difficult case as, for example, an obstinate posterior position in a primipara. It has worked very well.

One point I have noticed, and that is it gives a slow pulse on the part of the mother. That worried me at first, but I have since learned that this does not signify anything abnormal.

Another charge has been brought against ethylene in obstetrics—I hear no more of it now: It used to be said that it increased postpartum bleeding. I have not found that to be true. We do get postpartum bleeding once in a while, but I have not seen it increased by the use of ethylene.

Another thing I noticed (it may not be correct), but it appears to me to be a fact that it does not influence a baby following Caesarean section as much as ether. The babies generally cry much quicker and are much easier to resuscitate. As far as concerns its use in normal obstetrics, or with low forceps, I have not been able to see that the anesthetic has affected the baby.

Dr. Preston M. Hickey (Ann Arbor, Michigan): I should just like to add a postscript to the quotation from Dr. Cabot in which he speaks of 33,000 anesthetics. This was written before we had a bad explosion. Since that time ethylene has not been used in the University Hospital at Ann Arbor, Michigan.

Dr. M. J. Gelpi (New Orleans): I do not think this splendid paper should be allowed to pass without a little further discussion.

While I am an advocate and a user of ethylene gas, I don't think the idea should be allowed to prevail that it is the ideal anesthetic by any means. I don't think we have come to the point where we can talk about any anesthetic as being ideal, unless, of course, you can say that it has no objections. That certainly can't be said about ethylene.

So far as the explosibility is concerned, I am frank to confess I always have a certain amount of apprehension when an ethylene tank is in my room. Furthermore, I always feel restricted in my work to a certain degree, many times, because I can't use the cautery. Every now and then something will turn up that makes you feel you want to use a cautery, and I feel as though it is better not to do it. I am afraid to do it. I think that is a thing for serious consideration.

In our anesthetic work, we work on the principle that wherever you have to use a large quan-

tity of a powerful drug to produce an effect we find it an advantage to use smaller quantities of several drugs to accomplish our purpose, the idea being you have several means of elimination instead of just one, which seems to be a little safer for the patient. Therefore, we have adopted the Gwathmey and Hooper idea for all our anesthetic work, whether we use ethylene, or ethylene and ether, or ether alone, or with local, in this way: An hour before operation our patients get ten grains of chlorotone by mouth, unless the operation is to be on the stomach when we give this chlorotone by the rectum. At the same time, an hour before operation, we give a synergistic hypodermic of morphin, usually an eighth, sometimes a sixth for a large patient, with two c. c's. of 50 per cent magnesium sulphate injected deeply through iodine. In fifteen minutes we repeat this, and then the patient comes down for operation in a wonderful mood for the general anesthetic, always requiring less of the general anesthetic.

Dr. Ward and myself have checked up on this thing pretty carefully at the hospital, and we have found that in some abdominal operations with ether alone we have run as low as three ounces. That is something to be thought of with your ethylene as well as with all general anesthetics.

So far as relaxation is concerned. I haven't been as fortunate as Dr. Nix, and perhaps I am a little finicky as regards relaxation. But in nearly all of our abdominal work we have found it necessary to use some ether.

Dr. J. T. Nix (closing): I have nothing to say, except to thank the gentlemen for their discussion of my paper.

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SPLANCHNIC ANALGESIA.*

ITS CONDUCT AND EFFICIENCY IN SURGERY OF THE UPPER ABDOMEN.

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NEW ORLEANS.

In 1913 Kappis, during animal experimentation, learned that section of the splanchnic nerves caused loss of pain sensation in the stomach, spleen, bile ducts, and upper portion of the small intestines. During the same year he injected for anesthetic purposes the splanchnics as they enter the semilunar ganglia and his results created considerable interest and caused suggestions for additional methods of producing splanchnic analgesia.

This term implies the blocking, with an anesthetic solution, of the splanchnic nerves, by infiltration of the retroperitoneal tissue about the solar plexus, thus altering the pain sensation normally produced by manipulation of the upper abdominal organs under splanchnic control.

The splanchnics are three in number, situated on either side; the greater, lesser and least splanchnic nerves. The greater

splanchnic nerve is formed on the lateral side of the eleventh dorsal vertebrae by roots from the middle thoracic sympathetic ganglia, receiving fibers from the fifth to tenth thoracic nerves by way of communicating rami. It passes through the crus of the diaphragm into the abdomen to join the corresponding semilunar ganglion. The lesser splanchnic nerve arises from the lower thoracic sympathetic ganglia receiving branches from the tenth to twelfth dorsal nerves and enters the abdomen in company with and lateral to the great splanchnic nerve, where it, too, joins the corresponding semilunar ganglion, also giving fibers to the renal and celiac plexuses. The least splanchnic nerve is formed by a branch from the twelfth and may accompany or be incorporated in the lesser splanchnic nerve.

The semilunar ganglia are two in number situated one to either side of the median line and resting opposite the first lumbar vertebrae immediately above the pancreas. They are partly covered by the vena cava on the right and pancreas on the left.

There have been recommended four general methods of inducing splanchnic analgesia: Two by the anterior and two by the posterior routes. The anterior procedures are those of Braun and of Wendling. The posterior procedures are those of Kappis and of Roussiel. That of Roussiel is unnecessary while that of Wendling is foolhardy and should not be attempted. These are only mentioned in passing.

Braun's anterior splanchnic analgesia is accomplished after laparotomy by ventral abdominal block. The liver is gently elevated by a retractor in the hands of an assistant. The operator with the left hand retracts the stomach downward and to the left at the same time passing the left index finger above the lesser gastric curvature, into the space between the aorta on the left and the vena cava on the right, gaining contact with the anterior surface of the body of the first lumbar vertebrae.

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The forceful pulsations of the aorta are easily recognized and this structure is pushed to the left, while the vena cava offers little resistance and collapses beneath the finger. The aorta is quite resistant and while it may not be easily punctured such an accident is possible and should be guarded against. The specially prepared needle is passed along the radial side of the left index finger until its tip is reached, when its point is introduced with a quick thrust into the retroperitoneal space, striking the body of the first lumbar vertebrae. The finger is withdrawn, aspiration performed and should blood be obtained, the needle should be withdrawn and compression applied for a few moments. The procedure may now be repeated and when it is determined that the needle is properly placed, injection is made of from 50 cc. to 70 cc. of $\frac{1}{2}$ per cent novocain or procain solution.

This procedure is quite efficacious and has a wide field of application. It may and has been used in mid-epigastric and right rectus incisions. However, in cases of massed adhesions caused from pericystic inflammation or subacute perforating ulcer, access to the splanchnic area is difficult and not infrequently impossible.

The posterior injection after the Kappis procedure, modified by making only one puncture to either side of the vertebral column, is the one most generally employed by the author and it has been found to be the most universally applicable. This injection is made by selecting a point below the inferior margin of the last rib four fingers' breadth lateral to the mid-dorsal plane. This is normally opposite the spine of the first lumbar vertebrae. Here an intradermal wheal is raised and with the patient in either the lateral or sitting position, a 12 cm. 18 or 19 gauge needle with a short bevel is introduced so as to make an angle of 30° with the sagittal plane, passing inward, upward and medially toward the first lumbar vertebra. As the needle point reaches the vertebra at the junction of its lateral and ventral surfaces

it is in close association with the splanchnic nerves; so long as the needle is not introduced more than an additional centimeter there is no danger of injuring the structures of the retroperitoneal space. An injection is made of 20 to 40 cc. of $\frac{1}{2}$ per cent novocain or procain solution. A similar procedure on the opposite side accomplishes analgesia of all viscera under splanchnic control.

It is now essential that laparotomy be performed under ventral block analgesia since the anterior abdominal wall is not under the control of the splanchnics but is innervated by the spinal nerves themselves. This is effected by introducing 10 cc. of $\frac{1}{2}$ per cent procain within the lateral edge of rectus sheaths between the serrations of the muscle.

All procedures governing any form of local or regional analgesia must be observed. The patient should have a preliminary hypodermic of pantopon or morphin. The patient must be impressed with the difference between touch sensations and pain sensations, even to the point of actual demonstration, for he will experience frequently the sense of touch or pressure while he should not have pain. This explanation and understanding alone will be of the most valuable aid to both patient and operator.

The anterior method is associated with some degree of discomfort as the finger is introduced into the splanchnic area, but immediately the injection is made there is instant and complete relief. This procedure is carried out under the guidance of the sight and touch; it also is accompanied by some possibility of danger—such as veni puncture or intravenous injection. However, with reasonable care this should not occur.

The posterior method as outlined is relatively free from danger unless one becomes ruthless in the introduction of the needle. There is little or no pain experienced during puncture but this may be eliminated by the deposition of a few drops

of anesthetic solution along the route of the needle. The posterior injection may be utilized for exploration of the upper abdomen where other than epigastric incisions are employed.

This type of analgesia has been employed by the author for the past five years and it has been one hundred per cent satisfactory for all surgical procedures in the upper abdomen. There is a complete absence of pain, perfect relaxation of the abdominal musculature associated with that most desirable phenomenon, an absence of intra-abdominal pressure evidenced by the willingness of the viscera to remain within the abdomen and not present themselves in the operative field or wound. There may be a drop in blood pressure of 25 to 30 m.m. with associated symptoms but a preliminary injection of ephedrin sulphate readily compensates for this. The patient may occasionally experience a feeling of nausea or even vomit. The post-operative course of a patient operated by this procedure is strikingly free from nausea, vomiting, or pain, and the need for narcotics is rare. There has been no case of abdominal distention requiring treatment for its relief.

CONCLUSIONS

1. Splanchnic analgesia is accomplished by the introduction into the retroperitoneal space opposite the first lumbar vertebrae sufficient anesthetic solution to saturate the splanchnic nerves and semilunar ganglia.

2. It is thoroughly efficacious for all operations upon the stomach, duodenum, spleen, pancreas, gall-bladder and its ducts, the upper third of the small intestines and the transverse colon.

3. Its introduction is simple. The analgesia is absolute, relaxation is complete, and intra-abdominal pressure is negative.

4. It is dependable and its duration is from two to three hours.

5. The post-operative course presents no alarming or distressing symptoms.

There is rarely nausea, vomiting, pain, or use of narcotics. Abdominal distention has been absent.

6. Braun's anterior injection after laparotomy is practical, and efficacious, but limited in its use. The Irwin-Kappis posterior procedure is the most generally applicable and the simplest of application.

7. Splanchnic analgesia is the one ideal for surgical procedure of the upper abdomen.

DISCUSSION.

Dr. Maurice J. Gelpi (New Orleans): Dr. Irwin does his local work with so much ease and facility, and so beautifully, that I am not surprised at his continued enthusiasm for this wonderful method of producing anesthesia.

I had occasion to discuss this subject in the Orleans Parish Society a few months ago. I still feel pretty much the same about the subject as I did then. I am convinced that splanchnic analgesia has a definite field of usefulness. In my opinion, it produces the most marvelous relaxation in the abdomen of any anesthesia I know of.

At the time we discussed this before, Dr. Ochsen made the point that this method of anesthesia was not free from danger. He is certainly correct in the matter, and yet with proper precautions, and with the use, particularly, of the Dunham needle for the anterior injection the thing can be made certainly reasonably safe if the individual who is doing it has taken the trouble to get little practice in introducing the anesthesia.

While I am convinced that this method of anesthesia lends itself best for gastric surgery and intestinal surgery, we have been able to do work on the stomach, resections of the little bowel, explorations, cholecystectomies, and work of that character, with absolute satisfaction.

As regards the question of whether we should use the anterior method or the posterior method, as far as I am concerned I am still inclined to the anterior route where the conditions are favorable for this injection. For a long while I didn't attempt the posterior route except as Matas does it, and where we have used it we found it very satisfactory.

We have used it a number of times in order to explore. Where we felt there was trouble on the right side, we have done a posterior injection on the right side, blocked it anteriorly, and then with a careful anesthesia of the peritoneum, which is always very important, we have been able to ex-

plore the gall-bladder, duodenum and the pylorus very satisfactorily.

I want to call your attention here, again, to the importance of the use of something to put your patient in the proper mood for this anesthesia. Your patient must be prepared in advance by explaining what is going to happen, and we found that in trying to supplement the absence of what Dr. Matas calls the luxury of going to sleep the Gwathmey idea has served very well. We always give the chloretone one hour before, and at the same time give two cc.'s of 50 per cent of magnesium sulphate in morphin. We repeat that in fifteen minutes. That brings the patient down in a mood where the rattling of instruments doesn't disturb him, and gives you a much better chance to do your local work.

I believe while the tendency is for this type of anesthesia to be supplemented by the revival of interest in spinal, there is still a definite field of usefulness for splanchnic, and I feel that anyone who is doing much abdominal work should be prepared to do this work either by the anterior route or the posterior.

Dr. Emmett Irwin (New Orleans): I want to thank Dr. Gelpi for his very kind remarks.

I am glad he mentioned the question of preparing the patient beforehand. In all types of local work the patient should be made to understand that he is going to feel. Never promise a patient that he won't feel what you are doing. Many a local has been spoiled by promising the patient that he would not feel what you are going to do. He will feel, but he should not have the pain.

Dr. Irwin showed slides.

Dr. Irwin: The remarkable thing about the splanchnic analgesia is the great relaxation that we have. The negative intra-abdominal pressure is evidenced by the willingness of the viscera to remain within the abdominal cavity and not present themselves in the wound. You don't have to fight with the viscera all the time to keep them out of the way.

There is scarcely ever postoperative nausea or vomiting. There is no abdominal distention following this type of anesthesia, and there is rarely a case in which a postoperative narcotic is necessary. For that reason, I think that type of analgesia is about the most ideal that we know of at the present time for surgical procedures in the upper abdomen. It controls the stomach, gall-bladder, biliary passages, pancreas, kidneys, spleen, upper intestinal tract and the transverse colon.

Thank you very much.

SPINAL ANESTHESIA.†

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For more than three decades spinal anesthesia has run the gamut of recurring popularity and disfavor. At the present time the pendulum is swinging toward approval, and it appears that spinal anesthesia may once more be in vogue. This degree of favor is due, in part, to refinements of technic and to the availability of new drugs. But more especially its current widespread application is due to a more thorough understanding of the reactive phenomena accompanying spinal anesthesia. Knowledge of a procedure is axiomatically a prime requisite for its correct employment. This peculiarly applies to spinal anesthesia. Undoubtedly its past disrepute was largely justified because of untoward results obtained by those whose haste to use a new method curtailed their complete understanding of the possible undesirable reactions and complications. Further, it is worthy of note that those who now most ardently advocate spinal anesthesia have the best knowledge of its limitations and are most conservative as to its indications.

In 1862 Schraff found that cocain possessed local analgesic properties, and in 1884 Koller suggested its employment for surgical purposes. In 1885 Corning, experimenting with cocain, conceived the idea that if injection were made in close proximity to the spinal cord, anesthesia could be produced by the drug's entering into the circulation about the cord. This was, of course, a misconception, but in attempting to inject the solution of cocain near the cord in the lumbar region, he unintentionally pushed the needle into the subarachnoid space and induced the first spinal analgesia. Corning suggested the surgical

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applicability of irrigating the cauda equina with anesthetic fluids, but no one seemed to be impressed by his suggestion until Bier demonstrated its entire feasibility in a most dramatic way when he observed the effects of analgesia induced, by this method, upon himself, his assistants, and six patients. Bier's paper, published in 1899, established the surgical application of spinal anesthesia, and very soon many surgeons throughout the world, especially in America and France, adopted the method. On December 10, 1899 Dr. Rudolph Matas successfully performed a hemorrhoidectomy with spinal analgesia induced by injecting a 1 per cent solution of cocain into the subarachnoid space at the level of the fourth lumbar interspace. A short account of this experience, published in December, 1899, was the first American report of spinal anesthesia. The procedure was soon widely acclaimed, and surgeons hastened to attempt all types of operations with spinal anesthesia. Among those best fitted to judge, Bier, especially, protested against such recklessness, and insisted that the method would not be safe until less toxic drugs could be found and until improvements in technic could prevent the dangerous accompanying phenomena. However, no one heeded these warnings, and any semblance of conservatism was soon lost, and radical procedures were in vogue. Morton, bolder than the rest, advocated the use of spinal analgesia for operations upon all parts of the body. No doubt his work gave a justification for the incorrect substitution of the term "anesthesia" for "analgesia." Tragic fatalities soon curtailed the method's popularity, but later, with the advent of new drugs, the then dying glow of enthusiasm again burst into flame. In a few instances this enthusiasm became permanent, but in far more cases it was as transitory as it had been previously. Those who continued to use spinal analgesia, at first, had rather discouraging results, but as they grew to understand more of its limitations their results began steadily to improve. We are now vested with their

accumulated experience, and, in addition, are armed with new drugs of proven therapeutic value.

The advantages of spinal analgesia have long been known, and the surgeon would gladly have availed himself of them had not his fear of the procedure rightly inhibited him. Spinal analgesia redoubles the surgeon's efficiency by producing perfect relaxation, entire freedom from pain, augmented peristalsis, and contracted intestines that do not protrude through the abdominal incision. The method entails a technic over which he can have complete control and supervision. As his skill in its employment increases he attains a finesse unequalled in the realm of anesthesia. Absence of nausea and vomiting makes possible early ingestion of food, thereby tending to prevent acidosis. Paralysis of the gastro-intestinal tract, always an annoying, and not infrequently disastrous, post-operative complication, is rarely seen after spinal analgesia and then only in a comparatively mild form. In no other way can so small a dose of anesthetic drug produce such extensive analgesia with so little systemic toxemia. If any depression from the anesthetic does occur, its onset is within a few minutes after the induction, and is well borne because the patient has not been subjected to operative shock. This is in contrast to the accumulative depression accompanying a long inhalation anesthesia.

However, we are reminded that even in anesthesia Utopia is still around the corner. Spinal analgesia has compensating disadvantages. It is a highly technical method; lack of skill in administration is more obvious than in the use of ether, and lack of trained supervision during the period of analgesia may prove extremely disastrous.

It has limitations, and with no other anesthetic must indications be so carefully weighed. One obvious disadvantage is that once the estimated dose of the drug has been injected and the operation started, if,

for some reason, the operation is prolonged beyond the anticipated time, nothing can be done to lengthen the duration of the anesthetic, and one is obliged to resort to inhalation anesthesia or give a second spinal injection. However, analgesia can safely be procured for one and one-half or two hours, which length of time should allow of all but extremely unusual abdominal operations. A few patients vomit, but in the absence of such factors as psychic influence or idiosyncrasy to morphin (given pre-operatively), this is evidence of high diffusion of the drug, and is accompanied by pallor, sweating, syncope, and air-hunger. There is no reason for such an untoward reaction to occur if the analgesia is properly performed. There is, of course, the possibility of cord injury. This, indeed, is remote, and should never occur if low punctures are made, and short beveled needles of small caliber are used skillfully.

In the many thousands of cases reported by both careless and careful surgeons there have been a few instances of ocular paralysis, occurring no doubt from a high diffusion of too large a dose of anesthetic drug. In spite of this unwarranted complication, none of the palsies reported have been permanent.

It is not my purpose to compare these disadvantages with the known shortcomings of inhalation anesthesia. However, I think that it is fair to mention that comparable relaxation can be obtained only by deep ether anesthesia, which carries the well-known predisposition to surgical shock, post-operative lung complications, and damage to the parenchymatous organs.

Spinal analgesia can safely be used for all operations below the diaphragm, with but few, yet very definite, exceptions. Until recently it has been thought that this form of anesthesia was suitable only for "bad risk" cases, whereas now many surgeons realize that it is an ideal anesthetic for the young robust individual, and is contraindicated in the moribund. Pati-

ents with hypertension are difficult problems for any type of anesthesia. They respond very favorably to spinal analgesia. However, it is justifiable to emphasize the point that a sudden reduction of the systolic pressure is even more poorly borne by these patients than a similar decrease would be tolerated by the normal individual. Low blood pressure was formerly the classical contraindication to spinal analgesia, but, with properly controlled diffusion of the anesthetic drug and appropriate doses of ephedrin, this should not prove an absolute contraindication, unless, of course, the hypotension is due to shock or hemorrhage. The author has used spinal analgesia in many cases of low blood pressure, three of which may be cited as having a marked degree of hypotension. The first case was that of an anemic male with a systolic blood pressure of 84, in which a perinephritic abscess was successfully explored and drained. The second was an anemic male with an undetermined type of enteritis and partial intestinal obstruction with a systolic reading of 82, in which case high spinal analgesia was successfully tolerated for an exploratory laparotomy and enterostomy. The third was a female with Banti's disease, having a systolic reading of 78, in which case a splenectomy was successfully performed. It would seem then that hypotension *per se* is not an absolute contraindication to properly controlled spinal analgesia. Cases with marked renal damage tolerate spinal analgesia better than inhalation anesthesia. Ether is known to have a definite deleterious effect on renal tissue and even patients subjected to ethylene or nitrous oxid anesthesia occasionally have albumin and casts in the urine after operation.

Obviously the danger of post-operative inhalation pneumonia is lessened when spinal analgesia is used, especially in any case having an acute respiratory infection. Spinal analgesia will frequently prove ideal in emergency operations when routine preparation of the patient must be minimal. It

will also prove of unusual merit in cases of intestinal obstruction. Here relaxation will allow speedy operation without the usual amount of packing and retracting. The sphincters are relaxed, the intestines contracted, and peristalsis augmented, all of which conditions are greatly to be desired in intestinal obstruction. Spinal anesthesia may be of value in obstetrics, but in this connection many additional factors must be considered, and a wholly different technic is required.

Undoubtedly many of the occasional complications from spinal analgesia which were formerly noted arose from a disregard of the contraindications. Before deciding to use spinal analgesia, it is obviously necessary to take a careful history and to conduct a complete physical examination, for otherwise contraindications can neither be determined nor properly evaluated. The uninitiated may feel a strong urge to employ spinal analgesia in cases of shock, since these cases are, of course, bad risks for any anesthetic. Spinal analgesia is poorly borne by these depressed patients, especially if marked hemorrhage has occurred. However, as most surgeons agree that shock should be relieved, if possible, before operative intervention, this contraindication will seldom be encountered.

Patients with extreme cardiac decompensation, massive pleural effusions, or other conditions markedly decreasing their cardiac and respiratory functions should not be given spinal analgesia. Indeed, when such conditions exist inhalation anesthesia is also contraindicated, and the surgeon is obliged to take recourse to local infiltration or regional nerve blocking.

Any definite central nervous system disease, such as brain or cord tumor, meningitis, or neuro-syphilis, should contraindicate spinal analgesia. Patients with septicemia should not be subjected to spinal puncture for any reason, as such a procedure would eliminate the protective barrier between the infected blood and the nerve centers.

It is, of course evident that if localized suppuration is present at the site of the puncture, the needle should not be introduced.

In spinal analgesia the drug is introduced into the spinal fluid which bathes the intradural tissues, and hence gives the method the distinction of being the only local anesthetic in which the drug is placed in direct contact with the nerve roots instead of the extra-dural nerve fibers. The drug is quickly absorbed by the nerve roots both in the spinal canal and for about two centimeters beyond their exit. However, it is known that the drug does not appreciably impregnate the cord. If the anesthetic agent is held to a restricted area in a concentrated solution, the roots will be deeply penetrated by the drug, and will be thoroughly blocked. If wide diffusion is allowed, it is evident that there will be varying degrees of anesthesia, due to the different concentration of the drug, and most complete blocking will usually occur at the point of injection where the nerve roots are first bathed by the solution. If a large dose of such a diffusible drug is given the concentration of the solution, even some distance from the site of injection, will be sufficient to cause complete intra-spinal blocking of the nerve roots. Therefore, an extensive involvement of the nerve roots may occur and cause distressing or dangerous symptoms, but since the cord itself is not affected by the anesthetizing solutions, there is certainly no basis for the old supposition that the drug affected the vital center in the medulla. The first nerve roots to be affected are the sensory fibers. Their position favors ready contact with the injected anesthetic fluid, and their susceptibility allows quick penetration of the drug. Loss of sensation, therefore, is first noted as the posterior roots cease to conduct impulses. The anterior roots are less susceptible, but are next blocked, though not so completely unless certain drugs are used that have an affinity for the motor roots.

As these roots from the second thoracic to the first lumbar segment contain the white rami communicantes, an anesthesia involving this sector would cause an extensive involvement of the sympathetic system. Cardiac, vasomotor, and respiratory depression would then result. It is, therefore, apparent that the ideal anesthetic should involve as few motor roots as possible and surely leave unaffected fibers not concerned in the operative field. A blocking to the first thoracic segment results in a maximum fall in blood pressure and loss of cardiac augmentation. To extend the anesthesia to the level of the fourth cervical segment is to block the phrenic nerves and cause a diaphragmatic paralysis. We are then confronted with the very critical situation,—respiratory failure. Quite apart from the sympathetic system is the vagus nerve with its extensive distribution to the thorax and abdomen, directly opposing the sympathetics, since it has a depressor action in the thorax, while it supplies motor accelerator impulses to the abdomen. With the loss of sympathetic control to the abdomen and thorax the vagus exerts its impulses uninhibited. The splanchnic vessels dilate rapidly and become a reservoir for a large part of the blood in circulation. As the accelerating stimuli in the thorax are removed by the loss of the sympathetic conductivity the depressive action of the vagus nerve slows the cardiac and respiratory rate. It is apparent, then, that a high extension of the anesthetic is very undesirable.

The systemic toxicity of the drugs used is very slight, since the doses injected are small. However, some of the drugs formerly used were locally toxic in action in that they exerted a profound paralysis, especially of the sympathetic fibers. Complications were frequent. With the newer less toxic drugs this condition is not encountered.

From what has been said, it is evident that vasomotor paralysis occurs to a degree in almost exact ratio to the height of the

spinal analgesia. For operations in the upper abdomen it is necessary to induce spinal analgesia to the level of the seventh thoracic segment. No serious consequences should result from this, and if the anesthetic is not allowed to ascend higher the only clinical sign will be a slight lowering of blood pressure, which is readily controlled by appropriate doses of ephedrin or adrenalin. Therefore, the degree of vasomotor and respiratory paralysis entailed by a loss of conductivity of all the roots below the level of the seventh thoracic segment should represent the maximum in an ideally controlled spinal anesthetic. Such a result is uniformly possible if certain refinements of technic are employed. If the operative field extends only to the level of the umbilicus, anesthesia is necessary only to the tenth thoracic segment. The margin of safety in such an analgesia is considerable. If anesthesia is needed just to the iliac crests, the anesthetic drug needs only to exert its action to the level of the first lumbar segment, and, as no vital areas are thus involved, the systemic reaction should be negligible. Likewise, localized perineal anesthesia can be obtained by preventing the anesthetic drug from ascending higher than the level of the fifth lumbar segment, thereby blocking only the sacral roots.

The control of the diffusion of the drug is of the greatest expediency. Bier, who was the earliest experimenter with spinal analgesia, recognized this fact and used cocain in several solutions of varying specific gravity, in order to limit its diffusion. Unfortunately, Bier, at first, had only cocain with which to work. This drug exerted such an undesirable toxic action on the nerve roots that it soon became recognized that new drugs must be found if spinal analgesia were to succeed. With Fourneau's discovery of stovaine, in 1904, added impetus was given to the use of spinal analgesia. Stovaine exerted a marked effect on both the anterior and posterior roots and gave many untoward

reactions. It soon lost its early favor. Babcock was almost alone in not discarding it, in spite of his early bad results. However, his advice to resuscitate the patient, by forced insufflation through an open tracheotomy wound and by cardiac massage to the arrested heart by "the simple and quick method" of introducing an index finger through a stab wound in the third left intercostal space, did not impress the average surgeon that the procedure was without danger.

Tropococain is only slightly less toxic than cocain, and has never had a wide use. Aposthesine is not as toxic as tropococain, but is more than twice as toxic as novocain. Six thousand spinal anesthetics induced with apothesine have been reported from Deaver's Clinic. Headache was common and nausea and vomiting occurred in nearly every case. Novocain, introduced in 1903, has been submitted to very critical pharmacological study, and is now recognized as the safest and most satisfactory local anesthetic. Sise, of Lahey Clinic, in recognition of its efficacy, modified Hepburn's glucose solution for spinal anesthesia by substituting novocain for the stovain of the original solution. Likewise, Pitkin has recently developed a novocain solution containing sufficient alcohol to give it a specific gravity less than spinal fluid and containing amylophrolamin to make the solution viscid. By the use of the Trendelenburg position the light specific gravity can be put to advantage. This same light specific gravity demands that injection never be made with the patient in a sitting position, and makes it imperative always to induce anesthesia with the patient lying on the side. Pitkin has shown the solution to be non-irritant to the arachnoid and pia-mater, and claims that the viscosity decreases the toxicity of the novocain, by lessening the rate of absorption, and in addition renders the anesthetic controllable. As has been mentioned, the ideal spinal anesthetic would be one induced with a relatively non-toxic

drug, the diffusion of which could be definitely controlled. The experience of many who have used this novocain solution in a large number of cases seems to bear out Pitkin's original experimental and clinical observations.

Although the author has had occasion previously to use apothesine and crystalline novocain in a considerable number of cases, the last 305 spinal analgesias have been induced according to Pitkin's method. It has proven very satisfactory and seems to offer definite advantages over analgesia with uncombined novocain and other anesthetic drugs. In these 305 consecutive cases, operations of many kinds have been performed below the costal margin. There have been no deaths, and in no case did such an untoward reaction occur as to cause any anxiety or alarm. In no case has there been an absolute failure. However, in one case, even after a second injection, anesthesia was so long delayed that the operation was started with local skin infiltration. Yet, as the operation proceeded, anesthesia became established, and a laparotomy was satisfactorily performed. In seven other cases a second spinal injection was made necessary by lack of anesthesia to a sufficiently high level. These were all upper abdominal operations. It seems safe, in such cases, to increase the amount of anesthetic drug; since the author has done this, results have been uniformly good. The average length of anesthesia has been two hours. In several instances, however, satisfactory abdominal anesthesia has been maintained for two and one-half hours, and in many cases anesthesia was observed in the lower extremities and perineum as late as three hours after injection. Our attention is, of course, more sharply drawn to those cases in which the duration of anesthesia has not been sufficient to complete the operation. In only five cases has a short duration of the spinal analgesia been the reason for resorting to inhalation anesthesia. In three of these the duration of anesthesia was a

little less than two hours, and in two cases it was not quite one and one-half hours. With an operation lasting more than two hours inhalation anesthesia is anticipated, but is not always necessary. There has been no difficulty in localizing the anesthesia at any desired level. There has been no example of an alarming fall in blood pressure. The maximum decrease of the systolic pressure was 46 mm. of Hg., and this was observed during a cesarean section on an anemic patient with miliary tuberculosis. However, this marked reduction of blood pressure was probably not due entirely to the anesthetic, since it occurred fifty minutes after injection, during which time there had been considerable hemorrhage. In the usual analgesia extending only to the umbilicus there has been no remarkable variation in the blood pressure at any time. Most abdominal operations are performed without any evidence of vasomotor collapse, and, as has been stated, many hypotensive patients have been safely subjected to spinal analgesia. Five per cent of the patients exhibited nausea or vomiting, but even in these cases there were no symptoms suggestive of a high diffusion of the anesthetic solution. There has been no post-operative urinary retention which required repeated catheterization, and only in 20 cases was catheterization necessary during the first twenty-four hours. Most of these patients had been subjected to gynecological and perineal operations. In no case has headache occurred with sufficient severity to require active treatment. It has been the custom to elevate the foot of the bed to prevent headache. In cases of peritonitis the bed is either kept level or, later, may even be raised at the head with little fear of causing headache. As might be expected, the cases referred to one who is attempting to popularize a method of anesthesia are not always representative of the best surgical risks. This series includes many cases in which inhalation anesthesia was absolutely contraindicated

and spinal analgesia used only because a bad risk was recognized. Misjudgment was shown when spinal analgesia was used in the case of a patient with senile dementia. In spite of the fact that analgesia was satisfactory, she became unmanageable during the operation, and inhalation anesthesia had to be employed. Lack of proper consideration of the patient's history was responsible for inducing spinal analgesia on a senile patient with arterial sclerosis, who had previously had three cerebral hemorrhages. In view of the fact that no untoward reaction or change in blood pressure was entailed by the anesthesia, it seems difficult to believe that a cerebral hemorrhage 24 hours after operation was entirely caused by the spinal analgesia. Nevertheless, it was an error of judgment to subject such a patient to spinal analgesia.

Certainly there is no one ideal routine anesthetic method in general use at the present time. Spinal analgesia properly administered, properly supervised, and properly controlled, meets a definite need in an increasing number of cases. There must be a careful selection of patients, yet as one acquires more proficiency in this technical procedure, the scope of its application can safely be extended. The extensive experience of many men indicates that novocain is the safest drug to employ for spinal analgesia. The special solution of novocain recommended by Pitkin is apparently definitely controllable, and, therefore, at present seems to offer the best method of inducing spinal analgesia.

DISCUSSION.

Dr. Urban Maes (New Orleans): It is a privilege to open the discussion of such a paper as Dr. Garside has presented. It is technical, scientific and thorough, and there is little for the clinical surgeon to add except in commendation.

My experience with spinal analgesia dates back many years. Dr. Rudolph Matas, whose assistant I was, was the first to demonstrate and publish the method in America, and Dr. Samuel Logan and I were responsible for the second publication on the subject, a series of twelve cases collected

from Dr. Matas' clinic. In those days we paid scant regard to the indications for this type of analgesia, we were using cocain and using it without control, and the results were so uncertain and the disasters so frequent that finally we definitely limited its use.

A little later the subject was gone into by Jonnesco, who in a tour of the country demonstrated stovain for this purpose, with some strychnin added to the solution, the latter agent being intended to overcome the bad results for which the stovain might be responsible. His percentage of deaths was very high—I do not recall the exact figures—and when it is remembered that the death rate in general or inhalation anesthesia was something like 1 to 1200 or 1400, it is not hard to understand why spinal analgesia readily fell into disrepute. For my own part, I was a pioneer in its use, but I was glad to abandon it, and it stayed abandoned, as far as I was concerned, until quite recently. Indeed, it is not more than eighteen months ago that I published a paper dealing with the management of acute abdominal emergencies, in which I both explicitly and implicitly advised against its use. I am sorry now that I made that particular statement, for, thanks to Dr. Garside, I have had a complete change of heart.

I am thoroughly convinced that spinal analgesia has made many unsafe surgical procedures both possible and safe. I have had a number of such cases in which I would either have refrained from surgery or done it in the full expectation of a fatal outcome. One of these patients was a woman weighing nearly three hundred pounds, who had had a profound jaundice for several months, and whom I considered a very poor risk. I drained her gall-bladder under spinal analgesia, administered by Dr. Garside, she made a brilliant recovery, and she has resumed her usual occupations. I do not think the operation should have been possible under any other type of anesthesia.

There are certain points, however, which must be emphasized if this method is to be employed properly. In the first place, it is not suitable for all cases, and unless careful selection is made, disasters are bound to follow. The disrepute into which spinal analgesia fell in the past was entirely our own doing, and we must beware lest the revived method have a similar fate. Specifically, it is limited to surgery below the diaphragm; above that point, other types must be resorted to.

In the second place, this is a highly technical, highly specialized procedure, which calls for even greater skill in the administration than does inhalation anesthesia. It necessitates the constant services of a skilled anesthetist, who can recognize changes in the patient's condition and who can meet emergencies as they arise. It is not

something to be administered and then disregarded. The anesthetist must be with his patient from start to finish, and he must give him his entire attention. The question of blood pressure is particularly important, for there may be a most alarming drop soon after administration. In this connection I might add that I recently had an experience rather at variance with Dr. Garside's account. A patient, practically exsanguinated from a hemorrhage from a duodenal ulcer, was transfused, and then, while still a very bad surgical risk, was operated upon under spinal analgesia administered by Dr. Baker. His blood pressure at one time was nothing over zero but he was bought back promptly with ephedrin and adrenalin, and he illustrates very well the importance of careful, constant watching. This operation, which I am sure would have been impossible under any other form of anesthesia, was concluded successfully, and the patient's convalescence was most gratifying.

Undoubtedly the control which is possible with the use of the solution devised by Pitkin is the desirable feature of the revived method. The solution can be regulated and its diffusion controlled, and the lack of that control was the thing that made all of the older methods inherently dangerous.

In conclusion, I might mention the ease of post-operative recovery which is usual with the new form of spinal analgesia. Under inhalation anesthesia the patient usually awakens within a short time after the operation is concluded, at a period when the pain is most intense and attacks of nausea and vomiting most frequent. With spinal analgesia the duration of insensitiveness is much longer, and in many cases I have been able to refrain from the use of post-operative sedatives and opiates because the acute pain had subsided before the analgesia wore off. In addition, the gaseous distention is as a rule markedly less than it is when inhalation anesthesia has been used.

Dr. Wilmer Baker (New Orleans): I feel honored to be called upon to discuss Dr. Garside's paper, but must say in the beginning that my experience with this type of anesthetic is rather limited. I have watched Dr. Garside give quite a number and have given a few myself, all told, several dozen at the outside. However, I must acknowledge that to watch a patient entirely conscious, at peace with the world, breathing easily without the puffing and blowing that some surgeons complain of is impressive, even to the general anesthetist.

My experience with blood pressure has not been quite as satisfactory as Dr. Garside's and the only explanation I can see is that perhaps lack of familiarity in administering the drug may have

something to do with it. In one case I failed to get anesthesia and cannot conceive of such an amount of solution being injected into the spinal canal without producing anesthesia; I certainly must have injected it outside of the canal, although I was able to withdraw spinal fluid.

In one or two instances the blood pressure has certainly fallen lower than I liked to have it fall. One of these cases has been mentioned by Dr. Maes, in which it was low to start out. In one patient it dropped to 40 or 50 systolic, the diastolic indistinguishable, which I attributed to the imperfect line of demarcation, for some reason the drug diffusing higher than I intended it to, due possibly to the fact that I had mixed it a little too freely or injected it a little too rapidly. That patient even complained of fingers being slightly numb—not anesthetic, but numb. This fall in blood pressure takes place fairly frequently and the average surgeon's chief method of combating it is adrenalin. Dr. Garside gives us ephedrin and adrenalin. Of course, using the light spinocain of Pitkin we already have learned that the first thing to be done is to lower the patient's head. Pitkin is the only one who has written much about the use of ephedrin; all the others have stuck to adrenalin, some giving it intravenously and some by the subcutaneous or muscular route. I have always been taught that adrenalin was dangerous, given either subcutaneously or intravenously. My experience with adrenalin in general has been disastrous and I never employ it. I have seen the blood pressure, under general anesthesia, 40 or 50, and after the intravenous administration of adrenalin rise to 240 and in five minutes be back to 40, consequently I think it can only do harm given in that way. The least dangerous and most efficacious way to combat fall in blood pressure is infusion. If adrenalin is given at all, give it mixed with the infusion, one minim per 100 c.c. of the infusion solution; administered that way it is not dangerous and will produce a rise in blood pressure, but not an excessive rise, which is prolonged to where it will do some good.

A possible disadvantage mentioned in regard to the use of the special light solution of Pitkin is that the patient's head must be lowered. To offset that Pitkin is experimenting with a heavy solution, in which event the position must be reversed and the patient's head raised and his feet lowered. I feel that a word of warning is necessary. Pitkin is not the only one using these solutions and when they go into general use, sooner or later we are going to have, through some error in position, fatal results. Therefore, those of us who use it should watch one point—do not let it happen here.

Dr. Garside failed to mention that Pitkin's solution has been used rather extensively in obstetrical cases. That is one place where I believe it can be used successfully and give us something we cannot get with a general anesthetic. The only drawback is the limitation of time. If you can produce anesthesia of perineum and cervix—not anywhere else—with a preparation that will not limit the pains or reduce the intensity of the uterine contractions, a woman can come in and have a baby and not know anything about it. The only drawback, as already stated, is that labor might last a little too long, in which event we would have to resort to some other method, or repeat the injection of spinocain.

Dr. F. F. Loria (New Orleans): I am thankful for having heard Dr. Garside's paper and feel that I have learned considerably from it. My experience with spinocain is very limited, having used it in only about ten cases since Dr. Garside taught us how to use it. In seven of these cases anesthesia was practically perfect; in the other three I presume that failure to procure the required anesthesia might probably be traced back to myself, at least two of them. Not having used spinal anesthesia in as many cases as Dr. Garside, and many others who employ it almost exclusively, I rather blame myself, as very probably I did not use the proper technic. However, I wish to say something of these three cases. One of them has already been mentioned by Dr. Garside. It was a case of mitral stenosis in whom we had to inject the anesthetic twice. This was simply a case of delayed anesthesia. However, once obtained it was certainly perfect.

The second case was that of a woman weighing 230 pounds in whom there seemed to be a diffusion of the spinocain solution. To some extent I attribute this to imperfect technic; however, in looking back on this I believe it probable that the oldness of the spinocain at that time may have had something to do with it. In this instance we had anesthesia up to the clavicle and the patient even felt it (as Dr. Baker explained in his case) in the finger tips. It caused me much worry, but she finally recovered uneventfully.

The third case was an old woman of sixty-eight years with prolapse of the uterus and very large cystocele. In this instance the solution was injected at twenty minutes to eight and the anesthesia was perfect; but unfortunately some unforeseen circumstances delayed the operation, and it was not possible to begin until seventeen minutes after eight. At fifteen minutes to nine the anesthesia had worn off. At this time we were ready to close the abdominal cavity and had to resort to inhalation anesthesia.

Dr. W. H. Kostmayer (New Orleans): I rise to add my little word of commendation to those

that have gone before. This is a very beautiful essay that Dr. Garside has given us, with most conservative conclusions.

My first experience with spinal was as an intern, later on, as a young surgeon. After carefully observing the after effects of cocaine introduced into the spinal canal, temperature elevations 103° to 105°, paralysis of the limbs lasting sometimes three to four weeks, headaches, etc., then spinal did not appeal to me at all, and along with many others I stopped using it. Then came a wave of enthusiasm and we again started using spinal, principally with apothecin, but I had such untoward results in several cases that I began to feel like to Dr. Matas that anything which had to be used with an antidote ever ready was something he would resent having injected into his spinal canal. Just prior to Pitkin's work there came another wave in spinal. Going into the operating rooms and watching abdominal work it once more appealed to me. The absolutely relaxation, lack of necessity for packing off intestines, lack of vomiting, absence of saliva pouring out of patient's mouth, all became very tempting and I returned to the use of spinal in selected cases, particularly in cases with high systolic blood pressure so often associated with fibroids. The result has been so satisfactory that I am beginning to think I would not want to shoot the fellow who injected it into my spinal canal, but under certain circumstances would choose it to be used for myself.

I have had no experience with spinocain, Pitkin's solution. We are still using Metz' novocain, dissolving it in the spinal fluid and reinjecting it into the spinal canal. The technic is very important and I do not think a surgeon should tell his intern to go and give the spinal while he is scrubbing his hands, for the patient should be most carefully supervised.

I am now conducting a survey of the work done in the service during the past fifteen months covering some four or five hundred operations. Comparing the after effects of the inhalation type of anesthesia and spinal anesthesia, I find that when the latter is employed there is less retention of urine, less pain, less nausea and vomiting, practically absence of distension and the patient takes nourishment much sooner. So all in all it looks like an anesthetic almost ideal in certain cases, and in such cases I think all would do well to consider it.

Dr. E. Denegre Martin (New Orleans): I cannot add a great deal in the way of discussion, but I do want to endorse the use of spinal anesthesia in selected cases. My first experience with this anesthesia dates back to 1902 and I can clearly

recall the first case I injected, which proved nearly disastrous. I spent the night and part of the next day with her; she recovered. I at once made up my mind to experiment (all others were doing it) and the first experimental subject was a dog. He was so completely anesthetized that you could stick a pin in any part of his anatomy, nose or tail—he could not feel the touch of his feet to the ground; after a while he began to become more sensitive and escaped through the window. From this I learned that gravity had a great deal to do with the anesthetic, and was one of the first to recommend elevating the head of the patient. I also advocated smaller doses, and realized that by injecting it slower would produce a better effect. My experience at that time was limited to 62 cases in the study of which I noticed that usually the same thing would occur, viz: headaches were less frequent, there was little nausea or vomiting, and recovery seemed to be more rapid when the head was elevated. This was not the rule, however, and I practically gave it up until recently.

I believe that with the introduction of spinocain, and the work done by Dr. Pitkin, we have something that is safe, and the fact that it can be controlled is more in favor of the drug than anything else. I want to emphasize, however, that it should not be used without experience. Just the other day I had a patient with asthma, but had no one to administer the anesthetic. I used Metz' anesthesia and he recovered very nicely, but when I have an operation of any gravity, I certainly want a trained assistant for the induction of spinal anesthesia.

Dr. Monroe Wolf (New Orleans): I was sorry to hear Dr. Garside mention that spinal anesthesia should not be employed in septicemia and would like to cite a case of ileus which was benefited by its use.

The case was one of septicemia due to pyelitis of pregnancy, in which catheters had been passed; about forty-eight hours after the insertion the patient's temperature began to rise and distension was progressive. Rectal stipes, the application of heat, and pituitrin given in small doses were without result, yet we did not feel justified in doing an ileostomy. On the fourth day a grain of tutocain was administered between the eleventh and twelfth dorsal vertebrae and was immediately followed by the expulsion of a large stool and quantities of gas. I feel that this procedure saved that patient's life. The following day Dr. Havard induced labor and she made an uneventful recovery.

I do not know of any case where spinal has been employed as a therapeutic measure, but I

certainly advocate its use before resorting to operation in similar cases.

Dr. A. Mattes (New Orleans): It has been a pleasure to hear the essay presented by Dr. Garside and the generous discussion it has evoked. From what has been said it is apparent to all of us that with the use of controlled spinal we are confronted with the injection in the spinal canal of a solution, in case someone does something by error, that will probably kill your patient. Again, the use of such a solution entails with it the presence of a highly trained individual, something that we have not had with us since the introduction of any of the anesthetic agents previously employed in spinal anesthesia. Using it in work as high as the kidney we have seen no reason to employ a special anesthetist—just by carefully watching the patient ourselves, with the assistance of a trained nurse, we have used it satisfactorily. Now, if you are going to undertake to have in the operating room trained anesthetists only for the induction of spinal anesthesia, you are going to do that which immediately takes spinal anesthesia away from every small group or small clinic and puts it with only the large groups and large clinics. Since the introduction of spinal by Dr. Matas we have popularized it in the genito-urinary services, and although we greatly favor the use of spinocain, it has its drawbacks. Should anyone fail to keep the patient in the proper position for a certain length of time, or should the table suddenly tip, death might ensue. I feel that if one has never used the solution it has certain drawbacks and that the patient is much safer in the use of a solution where the sudden tip of the table or loss of control of the patient will not prove so disastrous. Of course, it is possible for any of these things to happen with any spinal but attended with a lesser degree of risk.

With regard to the use of spinal analgesia in the acute abdomen. In the case of a partially walled off appendiceal abscess should you produce complete relaxation you are apt to have a localized peritonitis become a general affair. In the hospital we have found that these acute abdomens do not do as well under spinal as they do under general; that a complete relaxation of three to four hours is disastrous. Therefore, I am sorry that Dr. Maes mentioned that he is entirely converted to its use in the acute abdomen. What we have learned in our private work and our work at Charity Hospital is the fact that it is not an ideal agent to employ, but that it is far better to use ether or local.

Dr. H. R. Unsworth (New Orleans): While I have enjoyed the doctor's paper, it strikes me that he is over enthusiastic. Our interest lies in the aftermath of spinal anesthesia many months following its use. We must not lose sight of the fact that myelitis follows trauma and that spinal puncture is always associated with a certain amount of trauma. It merely takes a microscopic lesion to produce a myelitis. It appears to me that spinal anesthesia is being used almost routinely, without discretion as to its specific indication. I believe it is called for in certain cases, but think there is a definite possibility of myelitis following a misjudged anesthesia.

Dr. Earl Garside (closing): I appreciate very much this generous discussion. Unfortunately, time did not permit an explanation of technic, and since details could not be emphasized they have been omitted from this short paper.

Dr. Maes called particular attention to a type of case that has already been especially mentioned; that is, the patient in a state of shock from hemorrhage. These collapsed patients are not good risks for spinal analgesia. In the case of the patient cited by Dr. Maes, he was confronted with a condition necessitating immediate operation, and with Dr. Baker administering the spinal analgesia the operation was performed with the patient in a satisfactory condition, except for a rather marked decrease in blood pressure. Dr. Baker mentioned the respective value of adrenalin and ephedrin. The difference between the two drugs, adrenalin with its rapid action and short duration, and ephedrin with its slower action and more prolonged duration, determines the indications for their employment. Ephedrin must be given before induction of the analgesia and its action will easily outlast the effect of the analgesic. As a rule, 50 milligrams of ephedrin sulphate is given if analgesia is to be procured to the level of the xiphoid, and 25 milligrams is sufficient with analgesia to the level of the umbilicus. There is rarely any need to use any ephedrin in cases with analgesia below the umbilicus. It seems only fair to say that a definite degree of localization of analgesia can be obtained by using only crystalline novocain. However, the controllability is only a relative matter, and cannot be obtained in all cases. Also, to limit the extent of analgesia the dose of novocain must be materially decreased, which will also shorten the duration of analgesia.

CONGENITAL INTESTINAL OBSTRUCTION: REPORT OF CASES.

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—and—

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NEW ORLEANS.

Congenital intestinal obstruction may be defined as a condition arising from maldevelopment of the intestinal tract in utero, the result being varying degrees of narrowing of the lumen or absence of entire portions of the intestine.

INCIDENCE.

The first case of congenital intestinal obstruction was reported in 1797 by Oslander. An idea of the rarity of this condition may be realized from the fact that Spriggs, in 1912, could collect only 328 cases in the literature covering a period of fifteen years. In 1918 St. George found but two cases in the pathological records in Bellevue Hospital over a period of fourteen years. De Sanctis and Craig, in 1929, found but 129 cases of duodenal atresia in the literature. Theremin found the incidence to be 11 cases in 260,000. Battley⁽¹⁾ found the condition to occur in every 20,000 infants. This is the rarest form of intestinal obstruction.

ETIOLOGY.

Although many hypothesis relative to the causation of atresia have been advanced, none of the theories are capable of accounting for all cases. The most important theories are enumerated:

⁽¹⁾Bland Sutton (1889), advanced the theory that the condition is due to errors in development at the important sites of embryological events. For example, the junction of the vitelline duct of the embryo and the ileum. Normally, the vitelline duct is obliterated at an early stage of fetal development. If this obliteration fails to occur, or does so only to an incomplete degree, a diverticulum is formed. On the other hand, if the oblitative process is

excessive, it may involve the ileum as well as the duct, producing an atresia or a stenosis at this point.

⁽²⁾Tandler's theory (1902), is based on the fact that the intestinal tract in the embryo is a tubular cavity, and the epithelial proliferation and hyperplasia of the cells about the cavity causes closure of the lumen of the gut. At the third month of fetal life, this is recanalized with the resultant patency of the gut. A failure to recanalize results in atresia or stenosis of that portion of the tract.

⁽³⁾Emanuel's theory (1903), concludes that some intestinal stenoses are due to strangulation of the gut as a result of twisting or rotation of the gut, fetal volvulus, etc., that occurred in the process of coil formation and lengthening of the intestines.

Jaboulay (1902) believed the condition to be due to some associated anomaly of the blood supply which interfered with the normal development of the gut in the area supplied by this vessel or vessels.

Among the minor causative factors may be included fetal peritonitis, traction due to herniae, pressure by new growths, mesenteric embolism, intussusception and twisting of the mesentery. However numerous the theories advanced, none can fully explain every case.

PATHOLOGY.

Obstruction may occur at any point in the intestinal tract. They are more frequent in the small intestine than in the large, and are more often in the duodenum than in the ileum or jejunum. However, this point is by no means an established fact. Landau placed the jejuno-ileal junction first in frequency, the duodenum next and the large bowel lastly (excluding rectal atresias). In 15 per cent of cases the lesion is multiple, the ratio of single lesions to multiple ones being 5 to 1 in Lippitt's and Morter's series. ⁽²⁾Atresia is more commonly noted than stenosis. The degree

of involvement varies from a slight narrowing of the intestine to extreme degrees of stenosis and atresia. The atresia may vary from involvement of a short segment of intestine to absence of an entire portion, this part being replaced by a fibrous cord. The intestine above the obstruction is dilated and the muscularis hypertrophied; below the obstruction the bowel is collapsed and atrophied, which however is quite patent and able to be distended to normal size. A feature of the condition is the tendency of the bowel distal to the obstruction to be in a state of marked spasticity. Thus a functional atresia is superimposed upon an organic one. This is an important factor in dealing with the condition from a surgical standpoint, for it is to this condition we can ascribe the nearly hopeless prognosis. When the obstruction is in the duodenum, it is usually proximal to the ampulla of Vater, but it may be in the region of the opening of the duct and be associated with anomalies of the pancreatic and biliary passages. Complete stenosis is found to be more common than is a partial one. According to Spriggs, we usually find one of the following pathological conditions present:

(1) Simple narrowing, (2) perforated diaphragm, (3) complete diaphragm, (4) short bands connecting free ends of bowels, (5) thread like bands along the free edge of the mesentery, the ends of the bowel being some distance apart, (6) a gap in the mesentery, there being no direct connection between the ends of the bowel.

SYMPTOMATOLOGY.

Vomiting is the most constant symptom; it usually begins shortly after birth and is persistent. This vomitus may contain bile if the obstruction is distal to the ampulla of Vater. If bile stained, it is said to be a point of differentiation between obstruction and pyloric stenosis; no blood is usually present in the vomitus. The frequency and the amount of vomitus depends on the shortness of the gastro-intestinal tract above the obstruction. Meconium may ap-

pear in the vomited material. Gastric retention may be demonstrated by the vomitus containing food or drugs taken hours or days before.

CONSTIPATION.

As a rule there is a history of no bowel movement since birth, cathartics and enemata are without effect. There may be a small meconium stool passed spontaneously or with the use of enemata, but nothing further is obtained. Stools may be passed in cases where the lower bowel is large enough for it to contain meconium and mucus to evacuate.

DISTENTION OF ABDOMEN.

This varies with the location of the obstruction. In duodenal obstruction the stomach stands out prominently, filling the entire upper abdomen, while the lower abdomen is relatively small. When the obstruction is low, the abdomen is more uniformly distended. Visible peristalsis may be pronounced, but is usually not as marked as that seen in pyloric stenosis. Distention is most marked when the obstruction is low down in the intestinal tract. A tumor may or may not be felt. Anuria is usually marked due to slight absorption of fluids. Jaundice is present at birth in few cases, and it may be very marked and persistent, especially when there is an accompanying malformation of the biliary apparatus. The combination of icterus with vomiting is suggestive but on the other hand there is nothing about the jaundice to differentiate it from the fleeting icterus neonatorum. Emaciation is rapid and progressive and becomes critical in the second and third twenty-four hour period of the child's life.

PROGNOSIS

Holt (3) states, "In the newly born, persistent vomiting is invariably dependent upon congenital intestinal obstruction which is most frequent in the duodenum." Again Lippitt and Morter state, "Given a newly-born infant with a patent anal opening who has passed no meconium; who swallows normally, but who vomits per-

sistently and who has abdominal distension, the only diagnosis possible is intestinal obstruction."

Richter (4) makes the notation of "Given the above symptom complex which develops in the first few hours after birth and the course rapid and progressive, congenital intestinal obstruction is almost the only condition to be considered."

DIFFERENTIAL DIAGNOSIS

(1) Hypertrophic pyloric stenosis (functional and organic), may be excluded as to the time of origin, both conditions usually developing after a preliminary normal period of days or weeks. The onset of congenital obstruction invariably dates from birth. Even when pyloric stenosis is accompanied by vomiting from the first few days of life, the phenomena of intestinal obstruction does not develop after a number of days. If the vomitus contains bile, the evidence is against pyloric stenosis.

(2) Imperforate anus may be excluded by digital examination.

(3) Esophageal atresia.

This condition is accompanied by regurgitation of the very first mouthful of food and water taken and when a communication with the trachea exists, as it does in the majority of cases; it is accompanied by characteristic attacks of cyanosis. Food is rejected without having reached the stomach and is unchanged, whereas in intestinal obstruction food is accepted before vomiting occurs. Passage of a catheter will immediately determine whether an esophageal stricture is present or not.

(4) Cerebral birth injury.

May be excluded by absence of marked emaciation and rapid progress characteristic of intestinal atresia. In birth injuries passage of food stools occurs also. Spinal puncture may aid in the diagnosis.

DIAGNOSIS

The outlook for the baby is extremely grave, for the diagnosis is rarely made early and the child is usually in extremis before it reaches expert hands. When one considers that in this obstruction the intestine distal to the obstruction is collapsed, small, wormlike, and tightly contracted, any surgical procedure would be at its very best quite difficult. However, with an early diagnosis, proper surgical procedure, the outcome in a considerable number of cases should be quite fair. Single lesions offer the best prognosis. Multiple lesions are practically hopeless.

Richter (3) states, "Aside from the atresia of the anus up to 1924 there have been three operative recoveries reported in the literature. Two years later, Grulee added one more operative recovery to this series." This will serve to show that the condition is practically hopeless. The failure to obtain more favorable results has probably resulted from the attitude of the profession as to its hopeless prognosis, rather than from the hopelessness of the lesion.

TREATMENT

The treatment of this condition is necessarily entirely surgical. In 1889, Brand Sutton made the first attempt to relieve the condition by surgical procedures, the operation consisting of an enterostomy.

Fockens performed the first successful operation by anastomosing the bowel segments. Enterostomy is the surgical procedure of choice in most instances. The difficulty that presents itself is the contracted state of the lower segment and as this can be dilated to normal size by air or water pressure, the proper procedure then consists of doing an immediate anastomosis.

(5) McLennon states, "That gastro-enterostomy and duodeno-jejuno-stomy have a very high mortality in infants, even if in good condition, but in a moribund infant there is little hope for success. The operation is practically doomed if it consumes

more than twenty minutes." In high atresia of the rectum in which it is impossible to approximate the segments, the creation of a low artificial anus may be necessary. When the obstruction is in the duodenum or duodeno-jejunal junction, gastro-jejunostomy is usually done.

REPORT OF CASES

Case No. I—

Female child of L. B., aged 3 days, entered the hospital August 1, 1919, because of persistent vomiting which had begun one hour after birth. No meconium had been passed either spontaneously or by the use of purgatives or enemata. The patient died shortly after admission. No necropsy was permitted, but clinically, the case was one of congenital intestinal obstruction.

Case No. II—

Female child of E. K., aged 5 days, entered the hospital on December 28, 1922, because of persistent vomiting, which began shortly after birth. No bowel movement had occurred since birth. The upper abdomen was markedly distended, the patient showed signs of extreme dehydration. Roentgen-ray examination demonstrated a complete obstruction beyond the pyloric end of the stomach. A laparotomy was performed immediately on admission, under ether anaesthesia. The stomach, first and second portions of duodenum were found to be greatly distended; the small intestine was collapsed. The exact nature of the obstruction could not be determined, but it was thought to extend beyond the second part of the duodenum, under the pancreas and adjacent structures. A posterior gastro-enterostomy was performed in twenty-two minutes; the patient died two hours later.

A necropsy performed showed the gastro-jejunostomy to be patent. The duodenum was markedly dilated, and was imperforate at the duodeno-jejunal junction, because of an atresia at this point.

Case No. III—

S. S., male child, aged 2 days, admitted on July 9, 1923, because of obstinate constipation and persistent vomiting since birth. Laparotomy performed under local anaesthesia showed an atresia of the terminal ileum. A lateral anastomosis between the ileum and the caecum was performed, patient dying one hour later. No necropsy was permitted.

No. IV—

E. T., female, aged 3 days, was admitted on January 31, 1924, because of vomiting of a brownish material. No bowel movements had occurred since birth. The patient was markedly dehydrated and the abdomen considerably distended in the epigastrium on left upper quadrant. Definite coils of intestine could be mapped on the anterior abdominal wall, and active peristalsis was elicited. Laparotomy performed immediately on admission showed an atresia of the jejunum about six inches from the ligament of Trietz. The proximal ileum presented seven distinct separate constrictions. The distal half of the ileum and colon was patulous. The constricted portion of ileum was resected and an end to side anastomosis between the ileum and jejunum was performed. The child died four hours later. No necropsy was permitted.

No. V—

Female child of E. L., premature, thirty minutes old, weight three pounds, was admitted on September 18, 1927, and died fourteen hours later. Necropsy performed showed an atresia of the distal portion of the ileum near the ileocaecal junction, the ileum terminated in a blind pouch. The caecum and appendix were absent, an atresia of the proximal portion of the ascending colon was present.

No. VI—

A. L. S. Female child, aged 3 days, admitted on March 28, 1929, because of vomiting which began immediately after birth. The first vomitus consisted of a large quantity of amniotic fluid aspirated while in utero. The child had vomited everything taken by mouth. The vomitus was bile stained, and no evidence of meconium was present. There was no associated sensation of nausea for immediately after the vomiting reflex, the child nursed vigorously. The length of time elapsing between food intake and vomiting varied from a few minutes to a half-hour after nursings. The vomitus was practically the same amount as the fluid ingested. Emesis was not projectile in type, but was more in the nature of a regurgitation. The birth weight was 11 lbs., on admission the weight was nine pounds two ounces. Normal meconium stools were passed three times daily since birth. The infant made no attempt to nurse the breast. Jaundice had grown more intense each day. Nothing had been present which would suggest a hemorrhagic diathesis. She had grown progressively weaker and more irritable daily.

Physical examination showed a markedly dehydrated and deeply jaundiced infant; marked loss of weight being evident. Kussmaul type of breath-

ing was present and acetone could be detected on the breath. The fontanels were depressed and the suture lines overlapping. The abdomen was distended especially in the left upper and both lower quadrants. Visible gastric peristalsis could be elicited. No tumor masses were palpable. After the ingestion of four ounces of water, the curvatures of the stomach could be definitely outlined, and were found to be the cause of the abdominal distension. Liver and spleen were not palpable. The rectum was patent.

PROGRESS:

4/29/29—

Fluoroscopic examination showed the stomach to be enormously dilated, filling the entire abdomen. The pyloric antrum and duodenal cap were greatly distended. The pyloric ring was definitely patulous. A barium enema was not retained due to marked colonic spasm. Six-hour plates of the stomach and bulb showed barium still present in the stomach. No trace of the meal could be seen in the intestine. Three meconium stools were passed and found negative for occult blood. A small amount of carmine was given to determine if the intestine was patent. Enemas given eight, twelve and twenty-four hours later showed no trace of the dye. A gastric retention of four and a half ounces was found by aspiration. The stomach capacity was found to be eight ounces.

4/30/29—

Jaundice was more intense than on the previous day. An area of extensive subcutaneous ecchymosis was noted at the site of a hypodermoclysis given the day before. Fluoroscopic examination showed the pyloric antrum and the duodenal cap to be filled with barium. No trace of the meal was noted in the intestine. Shortly after return to the ward, the patient had a hemorrhage, evidently gastric in origin. About 150 c. c. of blood tinged fluid being vomited; the child expiring immediately.

NECROPSY REPORT:

The stomach, pylorus, and first and second portions of the duodenum were enormously dilated; practically filling the entire abdomen, and contained a dark red granular fluid, which resembled old blood. The pyloric ring was patent; at the junction of the second and third portions the duodenum tapered to a thin fibrous band, just proximal to which the pancreatic duct emptied into the duodenum. This atresia measured 2 c. m. in length, distal to which the tightly contracted small intestine continued its course. The large intestine was contracted and presented no gross changes. The omentum was rudimentary. No

microscopical changes were present in any of the internal organs.

SUMMARY

(1) Congenital intestinal obstruction is defined.

(2) The incidence of congenital intestinal obstruction has been found to occur about once in every 25,000 infants. In the records of Charity Hospital, excluding imperforate anus, we can find records of only six cases of congenital intestinal obstruction, including our own.

(3) The various theories of etiology are discussed.

(4) In our cases the obstruction occurred at the following points:

- (1) Duodeno-jejunal junction.
- (2) Terminal ileum (two cases).
- (3) Second and third portions of the duodenum.
- (4) Multiple atresias of ileum and jejunum.
- (5) Terminal ileum and ascending colon. No necropsy was permitted in two cases.

(5) In a newly born infant presenting the following symptoms, persistent vomiting, constipation, abdominal distention, emaciation, jaundice and anuria, the diagnosis of congenital intestinal obstruction should be made.

(6) The prognosis is extremely grave, early diagnosis and surgical intervention offers the only hope for recovery. We can find records of only four operative recoveries in the literature. Three of our cases were operated upon and proved fatal.

(7) The treatment of this condition is entirely surgical.

Imperforate anus is not considered in this discussion.

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EXTERNAL OTITIS, ITS CAUSE AND PREVENTION*.

GEO. E. ADKINS, M. D.,

JACKSON, MISS.

External otitis is defined as an inflammation of the external ear, and from my viewpoint occurs in two forms, which for want of a better classification I refer to as the moist and the dry.

The moist form is usually found uncomplicated but occasionally is complicated with an otitis media or even an acute mastoiditis and presents two classical symptoms from which the diagnosis is made. First, the history of pain and probably a slight clear discharge; second, on inspection we find the canal eroded, moist and containing particles of degenerated skin surface, swelling, with tenderness on manipulation of the soft part. The condition is probably best differentiated from an acute mastoiditis by the history and mode of onset and by the manipulation of the soft part against deep pressure over the mastoid antrum without moving the auricular canal.

The moist form of external otitis occurs at all ages and all seasons but is found much more prevalent in the summer months and among those of playing or swimming pool age, and apparently is due to the retention of moisture in the external canal. This moisture remains in the canal at body temperature until a fungus growth has sprung up, the common old mildew that we find on towels or other fabrics that has been packed away wet. This fungus formation and the retained moisture causes a desquamation of the external skin surface followed by fissure formation and later some form of infection which passes on to the subdermal structure and completes the picture of moist external otitis.

The dry form as I have called it for want of better classification occurs at all ages and all seasons but is far more frequent in the patient that has passed the play age and is probably slightly more prevalent during the cooler months, and again we have two classical symptoms from which the diagnosis may be made. First, the history of itching, and, second, on inspection, we see the desquamation and scaling of the skin surface lining the external canal. The dry form is frequently transformed into the moist, always I might say when the condition is progressive enough to produce fissure formation of the skin. This is then followed by the same fungus growth and infection that we find in the moist form.

Let me mention for practical purposes, not going into the anatomy, that the condition is found in a cartilaginous canal which is lined with skin, the skin being reflected over and forming the outer surface of the drum membrane and that this skin located as it is, is not subjected to the external forces that harden the outer layer such as sunlight, air and friction, the common forces that are exerted on the skin covering the body surface as a rule. This skin remains delicate throughout life but likely does become more resistant as the patient grows older and probably accounts to some

*Read at the Sixty-second Annual Session of the Mississippi State Medical Association, May 14, 1929.

extent for the older person having the moist condition less frequently.

I am attempting to show that the local manifestations of external otitis, the moist form, and the dry form when it is transformed or passes into the moist form, is produced by one common cause, namely, retained moisture in the external canal. It is rather easy to understand how the child of play age gets the moisture into the canal and retains it long enough to undergo these succeeding changes, and that constant moisture in the external canal will result in an external otitis is rather generally accepted, but it is the class of patients past play age that has kept us in doubt. We are all familiar with the urticaria let it be dry or weeping as the dermatologist would classify it, or at least we recognize the reaction of a digestive disturbance on the skin, the itching and stinging that one experience after eating something to which we have an idiosyncrasy or the taking of some drug such as quinin that is so frequently followed by a rash on the skin. Remembering now that the skin located in the external auditory canal is a very delicate structure not hardened by the external forces previously mentioned, it is readily understood why this skin reacts more quickly and certainly more frequently than the skin covering the commoner or exposed surfaces of the body. When this reaction takes place it occurs in the external canal first. This phenomenon is followed by scaling, desquamation, itching and if the progress goes to fissure formation, is followed by infection, and the entire course of external otitis is gone through.

It occurs to me that the only debatable question would be just what constitutes an inflammation. If an infection must first be present followed by scaling, fissure formation, pain and discharge, the answer must be a different one from what it will be if scaling, fissure formation, infection, pain and soreness is the course, but it is my opinion that the infection is a secondary proposition. However, it must be reckoned

with when it occurs in the course of the disease where infection follows, but is undoubtedly not the exciting cause or primary stage of external otitis.

Let one immerse the hand in water for fifteen or thirty minutes or draw on a wet rubber glove for the period of an operation and afterwards observe the wrinkles and degenerated condition of the skin, remembering that if this occurs on the hand how much more readily it would occur in the external canal where the skin is much more delicate and the moisture retained for a longer period of time and at body temperature. After the skin is moistened long enough to cause degeneration it certainly must undergo scaling and desquamation. On the body surface this desquamation is lost, unnoticed, and the surfaced is dried by the air and sunlight, but not so in the external auditory canal for here the desquamation must drop down lodging in the canal along with retained moisture, the yeast fungi spring up, the fissure formation is produced, and the infection follows.

A few years ago pharmaceutical houses advocated the use of Bulgarian bacillus emulsion applied locally for the relief of external otitis and the remedy was not without value, but in those days was an empirical remedy whereas if my theory be correct, it can be classed as a rational one for it did inhibit the development and growth of the yeast fungi, and prevented many times the succeeding steps in the disease.

The prevention of external otitis would mean the keeping of moisture out of the external canal.

These cases come to the aurist because of the location of the malady and he rightfully attends to them for the same cause for the location of an inflammation in the external ear canal is certainly dealt with more perfectly by those who are skilled in the use of head mirror, speculum, and cotton applicator than one who does not so frequently use the instruments, but if it

was not for this, the moist form of external otitis would probably be found in the hands of the dermatologist and the dry form in the hands of the gastro-enterologist.

The case that comes as a result of some gastro-intestinal condition must be dealt with by physicians in other branches of medicine or by a periodical health examination and early diagnosis and treatment of the conditions. The case that comes as the results of the swimming pool might be combated by educating people that moisture in the ear from any cause is a detriment. The cases that we as otologists can combat or prevent are those coming as the result of frequent irrigations as prescribed by physicians, nurse, druggist or some good friend who has not differentiated the case. Personally I am of the opinion that irrigation in any ear condition is not good practice unless done by some one who can sponge the canals dry afterwards, and even in such hands should not be repeated often.

DISCUSSION.

Dr. E. F. Howard (Vicksburg): There is one little suggestion which comes to my mind that I have tried with very good results. We know that we begin to look for trouble in the swimming

season. Every now and then somebody comes trailing in with an infection. The modern swimming pool is cleaned out every day. It can only be from the moisture that is retained. I have come to handling some of my patients in this way. You have to pick out an intelligent patient to trust. You have to show them how to dry their ear out, to dry it with a little mop or a little cotton on a match. Dry the ear thoroughly, and you can stand a whole lot more drying when you are doing it yourself than when somebody else is drying it. It is a rather sensitive proposition. The patient can take the little mop or match with the cotton in it and dry the ear well. Fill it with alcohol for a few seconds, which will be very effective. I have been able to add a good deal to their comfort in that way.

Dr. C. A. McWilliams (Gulfport): There are a lot of cases in which there is absence of wax in the ear. It causes a good deal of pain when the canal is filled with wax. If you have a case that has too much wax in the ear use a little oily base, such as glycerine or vaseline—anything that will form a protection for the canal in the ear, and which will prevent getting water in the ear when going swimming. We advise the patient to use either white vaseline or cold cream, or any kind of oil, to completely cover the ear so that the water will not get in when going in swimming. Practically all my cases occur in the spring and summer, when perspiration gets in the ear. The treatment is very difficult. I find that alcohol and boric acid gives much relief. I have not yet found a real cure for this.

CASE REPORTS AND CLINICAL SUGGESTIONS

A CASE OF CARDIOSPASM.*

O. W. BETHEA, M. D.,
NEW ORLEANS.

Briefly, this case is somewhat as follows:

Mr. Y. is a civil engineer, employed by the Andean National Corporation, and was working in Columbia, S. A. He is 31 years old, married and has one child. His family and marital histories are irrelevant. He has always been a strong, robust person; in fact, remembers no previous illness except a carbuncle five years ago. He led an active, outdoor life. His personal habits were excellent.

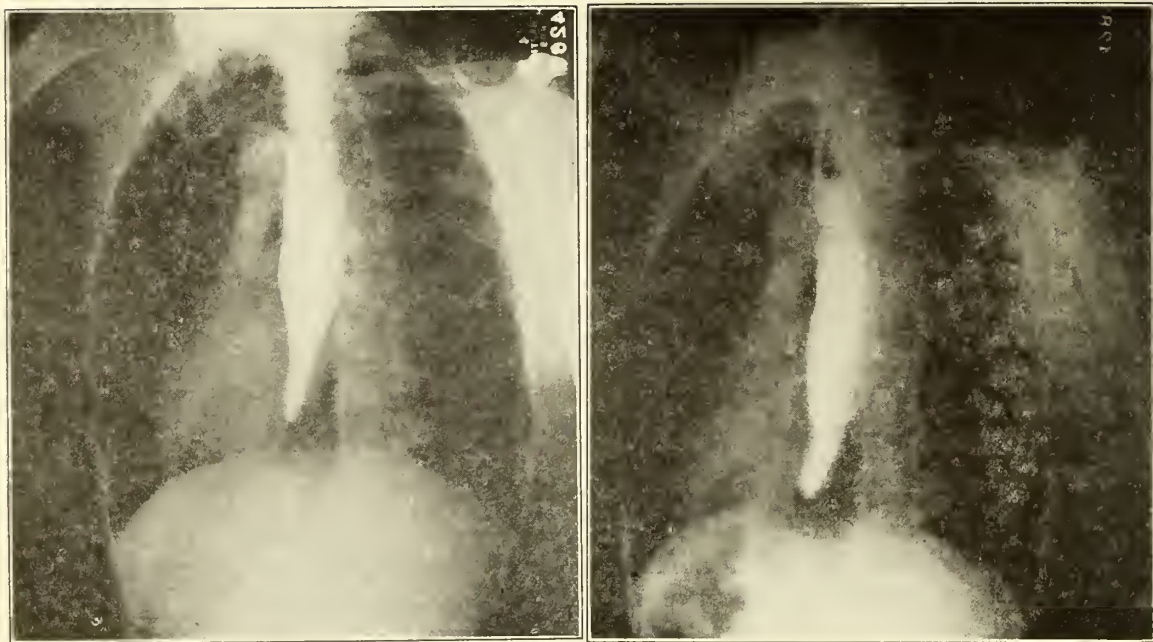
On May 7 while hunting in the vicinity of his station he was bitten by a snake. The wound was on the anterior aspect of the right leg, at the juncture of the middle and lower thirds. The

snake was not seen. He immediately applied a tourniquet, made of a strip torn from his clothing, but it was not properly applied and probably had little value. Within about thirty minutes after being bitten he was in a hospital under medical care. The wound was treated locally, but it was two or three days before antivenene could be obtained and administered.

He developed a stormy course with pain and swelling of the leg, dyspnea, hematemesis, hematuria, intestinal hemorrhage, tachycardia, prostration, high temperature, chills and all the evidence of shock. For several days it was not expected that he could survive.

Following this stormy onset, he developed gangrene of the leg. Numerous incisions and excisions of tissue were made, and the leg was not amputated only because it was felt that he would not survive the operation.

* (Presented at Clinical Staff Meeting, Baptist Hospital of New Orleans, June 8, 1929.)



Roentgenograms Demonstrating Cardiospasm

Early in convalescence he began vomiting, and for days at a time was unable to retain any food by mouth, and it was realized that the food was not reaching his stomach.

He was sent to me at the Baptist Hospital in New Orleans in the hope that we would be able to better carry out any measure that might be indicated. He arrived in New Orleans July 3.

He was found to be extremely emaciated, having lost nearly fifty pounds in weight. Prostration was marked. Otherwise, our examination showed nothing of interest, except the following:

Blood pressure, 102/68. Pulse, 90. Respiration, 22. Temperature, 99.4° F. Abdomen retracted, and tender upon palpation in the epigastric region. The leg was still discharging in several places.

The urine was alkaline, and showed 2 plus indican. P. S. P. (intramuscular) was 25 per cent in two hours.

The blood showed red cells 3,150,000, hemoglobin 65 per cent, white cells 6,250, S. M. 20, L. M. 4, N. 75, E. 1. No plasmodia were found. Wassermann negative. Blood chemistry normal.

All efforts at passing the stomach tube were unavailing though various types were tried.

We made roentgenograms as shown herewith and were able to satisfy ourselves that his condition was one of cardiospasm.

For several days there were periods of enough relaxation to enable us to give him some liquid nourishment by mouth, but as his state of nutrition was gradually becoming more unsatisfactory, Dr. Allen, whom I had associated with me in the case, did a gastrostomy and we began feeding him through the tube placed directly into the stomach, and everything by mouth was withheld. His response was prompt. He gained about ten pounds in the course of a few weeks, and after gradually resuming activity, went to the country for a month's recuperation with his family. He then returned for further observation, and we found that he had gained about ten more pounds and was feeling well. We permitted him to take two weeks longer in the country, after which he again returned to the hospital and we now have begun dilating the esophagus. This seems to be proceeding satisfactorily, and we are in hopes of returning him to full activity within a few months.

TYPHUS FEVER IN LOUISIANA.

A CASE REPORT.

J. H. MUSSER, M. D.,†

NEW ORLEANS.

Dr. W. C. Rucker has recently reported the first case of typhus fever to arise in Louisiana. The following report represents, as far as I know, the second case of this disease. The Weil-Felix reaction in this case early showed doubtful reaction. There was complete agglutination up to 1-80 on May 23. On the thirtieth of the month there was complete agglutination up to 160, partial agglutination up to 320. Negative controls showed no agglutinations. The known positive control (the case of Dr. Rucker) showed complete agglutination 1-200 and higher. The saline control showed no agglutination. In addition to the serologic examinations, there was a quite characteristic conjunctivitis and a typical maculo-papular rash of the chest and abdomen. There findings, in addition to the short duration of the disease, 15 days, the negative laboratory findings, the history of typhoid fever a few years ago, and the very definite Weil-Felix reaction which occurred, as it should, late in the course of the disease, point definitely to the diagnosis of typhus fever.

CASE REPORT.

F. S., a laborer, aged 25 years, was admitted to Ward 214 at Charity Hospital on May 19.

Chief Complaint. "Fever, headache and cough."

Present Illness. About 12 days ago while gathering moss in the swamps, the patient contracted a cold which was accompanied by a slight cough and frontal headache. The cough was at first dry but later it became more severe and moist in character. The following day the patient went out to work again. He felt very badly and with the other symptoms had general body aches and a little fever. As soon as he returned home at night he went to bed. He did not call a doctor, but took a few doses of 999. He remained in bed until his departure for the hospital. During his stay in bed he suffered from the symptoms mentioned above. His bowels have been regular,

moving about twice a day, being of normal color and consistency. There have been no urinary symptoms. His appetite is poor and he has been eating very little.

Past Medical History. The patient claims he had typhoid fever several years ago, when he remained in bed less than a month. He has had no other illnesses.

Social History. For the past three months the patient has worked in the woods gathering moss. He has had regular meals. He has not been exposed to any contagious disease. He drinks cistern water. No one in his neighborhood has been ill with fever.

Physical Examination. (Abstracted.) The examination of the patient reveals a well-developed and well-nourished white male lying quietly in bed, mentally alert, but feverish and apparently suffering some acute infection.

The skin over the thorax and abdomen contains numerous small macules, some of which are almost papular and of a rather pinkish red color.

Eyes. Conjunctiva, both palpebral and sclerae, are injected. Slight photophobia and blepharospasm noted. The right pupil is slightly larger than the left. The pupils react to light and accommodation.

Chest. Well developed. Expansion is good and symmetrical. The percussion note is slightly decreased at the right apex. Sibilant and sonorous rales are heard over both lungs. They are transient and heard more constantly over bases.

Heart. The sounds are slightly muffled. They are regular in rate, rhythm and volume.

Abdomen. Skin presents eruption as described above. There is no rigidity and no masses are felt.

Extremities. The patellar tendon reflex is slightly increased; otherwise they are negative.

Progress Notes. 5-19-29. Admitted to Ward 214, with provisional diagnosis of typhoid fever. History is fairly typical. Essential point in physical examination is conjunctivitis, evidence of bronchitis, maculo-papular eruption on skin of abdomen and chest, and a questionably palpable spleen. Pulse 98. Patient taken with acute abdominal pain this afternoon, which subsided after a short time. Highest temperature, 103.5°; pulse, 104; respiration, 18.

5-20-29. Temperature 102°; pulse, 84; respiration, 28.

5-21-29. Widal shows some slight agglutination with B. typhosus in dilution of 1-50, 1-100, 1-200

†From the Department of Medicine, Tulane University of Louisiana School of Medicine and Charity Hospital, New Orleans.

after 1 hour. Temperature down this morning; pulse rate normal. Patient comfortable. The eruption has faded somewhat today. Wassermann negative.

5-22-29. Highest temperature, 99°; pulse, 72; respiration, 20.

5-27-29. Doing well; convalescence uninterrupted.

6-7-29. Patient has been practically fever free since 5-22-29. Discharged.

LABORATORY REPORTS.

Urine entirely negative.

Blood counts—	5-20-20	5-23-29
Total red cells		4,350,000
Total white cells	11,250	10,000
Hemoglobin		80 per cent
Small mononuclears	11	14
Large mononuclears	9	9
Eosinophiles	0	0
Polymorphonuclear		
neutrophiles	80	77
Pathogenic cells	None	None

Serology. 5-21-29. Widal negative.
 5-21-29. Blood Wassermann negative.
 5-21-29. Blood Widal: moderate agglutinations with B. typhosus in dilutions of 1-50, 1-100, 1-200 after 1 hour.
 5-23-29. Weil-Felix: complete agglutination 1-80.
 5-23-29. Blood culture: ox bile to agar transplant shows no growth after 24, 48 and 72 hours.
 5-30-29. Weil-Felix reaction positive as noted in the first portion of this report.

Summary. A second case of typhus fever, occurring shortly after the first one reported, indicates that the disease is endemic in Louisiana. It has been shown to be present in several other Southern States by the U. S. Public Health Service.

CARELESS USE OF THE ENGLISH LANGUAGE.—The first and foremost atrocity is the misuse of the word "operate." Such expressions as "I operated him," "The case was operated," and similar abominations, appear frequently in our standard medical journals, are used in conversation and, worst of all, are taught to the student in some of our best medical colleges.

The word "operate" is derived from the Latin noun "opus" and verb "operari," meaning "work," and we should not say that we work a patient. Operate is a transitive and intransitive verb. A transitive verb is one that requires a direct object to complete its sense. Thus we may correctly say: "I operate a coal mine or a peanut stand or a cystoscope," "operate" being used as a transitive verb. In surgery, as far as the patient is concerned, operate is always intransitive. To satisfy our fondness for the use of the word operate and to use it correctly, we must limit our transitive use of the verb to operating the gas machine, the bone saw, the syring, but we must not operate the patient.

The word "pathology" is defined by Dorland as, "That branch of medicine which treats of the

essential nature of disease, especially of the structural and functional changes, caused by disease." By a curious quirk, the original meaning has recently become dislocated from a study of diseased tissue to the disused tissue itself. We hear such expressions from the operating room and morgue as, "no pathology of the gall bladder found," "exploratory incision revealed no pathology," and examination of chest plates conclude with the statement "there is no pathology in the lungs. We might as well say that the larynx shows no laryngology, the bladder shows no urology.

The terms "tuberculous" and "tubercular" are hopelessly mixed up. "Tuberculous" should be limited to any lesion or process caused by the bacillus tuberculosis; "tubercular" should be restricted to a condition in which tubercles or nodules are present.

We aim at accuracy in medicine. Exactness is necessary in prescribing, correctness is desirable in diagnosis and accuracy is indispensable in surgery. May we not profitably give some attention to correctness in medical English?—Editorial, Surg. Gynec. and Obst., 49:397, 1929.

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THREE NEW ORLEANS DOCTORS
HONORED

The very genial and charming ex-president of the Louisiana State Medical Society, Dr. Leon J. Menville, has again been honored by an elective position in one of the largest medical organizations of this country. Chosen as the Second Vice-President of the American Radiological Society, Dr. Menville undoubtedly received this honor for two reasons: in the first place, the personality of the man, coupled with persistent steady endeavors to improve his organization, to which may be added the second important reason, the ability to carry out scientific and experimental studies in roentgenology, shown by the fact that the paper that this new officer

presented in Toronto was hailed as one of the finest scientific expositions of his specialty during the meeting. It is obvious that either of these factors, personality and scientific attainment, might have made Dr. Menville one of the Vice-Presidents of the organization, but when both are combined in one man, there can be no question whatsoever but that the American Radiological Society made a most happy and felicitous selection.

All that has been said about Dr. Menville may with equal truth be written about Dr. Isidore Cohn, who was selected as the Second Vice-President of the Southern Medical Association, the largest medical society in the United States with the exception of the American Medical Association. Dr. Cohn is a surgeon of skill, a scientist of repute, and a gentleman at all times agreeable, affable and willing to serve. He has attained a reputation not only as a result of his surgical ability, but also because of his interest in medical history and because of his great ability as a teacher of medical students. Among these latter, by his stimulating and impressive demonstrations and lectures, he has achieved great popularity. The honor which the Southern Medical Association has bestowed upon this surgeon is a well merited one, and the Association has honored itself in honoring him.

Since the time the above paragraphs were written, still a third honor has been conferred upon another surgeon of New Orleans. Dr. Urban Maes was elected Vice-President of the Southern Surgical Association. This also is a well merited honor. Dr. Maes has always been recognized as one of the outstanding surgeons of the City. His ability and his knowledge of surgical subjects is so well recognized, not only in our local medical circles, but also nationally, that during the war he attained almost the highest position that was accorded civilian surgeons, becoming a Corp Consultant in the last months of the War. Upon his return to this country,

Dr. Maes has received numerous honors, honors that came to him not only because of his popularity as a man, but also because of his unexcelled skill as a surgeon and his magnificent surgical judgment, without which a surgeon is more or less of a technician. There are many good surgeons, men who are able to work with rapidity and deftness when they are operating, but a surgeon to be great must be skilled in diagnosis and must have the supreme attribute of good judgment. Both of these qualifications Dr. Maes possesses to an extreme degree. It is no wonder that his surgical ability is recognized everywhere and appreciation of it so shown by the numerous honors he has received, honors which he would have attained sometime or another, but which have come to him early in life because of his personal charm.

CHARLES V. UNSWORTH

Organized Medicine in Louisiana lost one of its most enthusiastic advocates and workers when Charles V. Unsworth died in New Orleans on the ninth of December. Dr. Unsworth had been sick for only a few short days with lobar pneumonia, and was unable to conquer the lung infection.

Dr. Unsworth graduated from Tulane University in 1904, and the following year saw him actively engaged in fighting yellow fever. He gradually drifted into psychiatry, largely on account of his association with the Louisiana Retreat, where from 1912 until his death he held the position of Physician-in-Charge. Dr. Unsworth was also a member of the Hotel Dieu Staff and he helped to organize the Tuberculosis and Public Health Association of Louisiana. In addition to his scientific and professional attainments, he was always an ardent worker, not only in the ranks of organized medicine, but also as one of the Presidents who served well and faithfully the Louisiana State Medical Society.

The grim reaper has carried off another of our former Louisiana state presidents. Always an enthusiastic toiler for the advancement of organized medicine, the passing of Dr. Unsworth will mean a real loss to the medical profession, as well as an actual tragedy to those whom he was constantly helping.

GORGAS MEMORIAL INSTITUTE

The annual report of the Gorgas Memorial Institute discloses considerable activity in the work of this organization. The educational program is being carried through vigorously and intelligently. A health service to a group of some 40 leading papers of this country is a part of the campaign on health education. In addition to this a national essay contest is held yearly, open to the two upper classes of the high schools of the country, for the purpose of stimulating adolescent interest in health.

In the Department of Mosquito Control, certain sections of the country have been surveyed and reports have been made indicating lines of attack which should be followed in order to get rid of mosquitoes in the particular sections investigated. The Gorgas Memorial was given a laboratory building by the Republic of Panama early in January. The institution has made a most excellent selection of the new director, Dr. Herbert C. Clark, former head of the Department of Laboratories of the United Fruit Company. Under the energetic leadership of this splendid type of medical man and scientist, there is no question that the scientific aspects of medicine, particularly tropical medicine, will link up with the practical features in such a way that the people of Central America will reap tremendous benefit.

The Gorgas Institute, under the active management of Admirable Grayson, seems at last, after some years of feeling around, found its place in medicine. Its aims and endeavors should now progress by leaps and bounds.

HOSPITAL STAFF TRANSACTIONS

CHARITY HOSPITAL MEDICAL STAFF MEETING, DECEMBER 17, 1929.

The first case for discussion was presented by Dr. R. H. Turner. The patient, a colored female aged 36 years, had been in the hospital one month. For 5 weeks prior to her admission she had complained of epigastric pain following eating, and had occasionally noted that her stools were black. During this time she had lost 15 or 20 pounds. For the past 2 or 3 months her appetite had been poor and she complained of weakness. A gastro-intestinal series showed a filling defect on the greater curvature of the stomach, and near the pylorus a defect on both curvatures suggesting the possibility of an annular lesion. Wassermann was strongly positive. She received intensive anti-luetic treatment, consisting of mercury, bismuth, potassium iodid and neo-arsphenamine. Her gastric analysis showed an achlorhydria even following histamine. During her stay in the hospital occult blood was present in the stools the greater part of the time on a hemoglobin free diet. Another gastro-intestinal series showed the filling defect less marked but the annular lesion apparently increased, and on December 17 the annular lesion was more marked and the other defect perhaps slightly less. Physical examination showed an anemia, evidences of loss of weight, tenderness in the epigastrium and rigidity. No mass was palpable on admission. At the present time, however, the tenderness was gone and a mass could be felt at the level of the umbilicus to the left of the mid-line. This was movable from side to side. There was no glandular enlargement and the physical examination was otherwise negative. Anemia had not improved and the weight had remained constant. In view of the persistence of the roentgen-ray findings and the lack of improvement on anti-luetic treatment, the case was thought to be one of carcinoma of the stomach in a young woman.

Dr. J. H. Watkins showed two very interesting cases of tularemia. The first case, a white male aged 53 years, complained of fever, weakness and nodular lesions on the arms and hands. Three weeks previous to his admission he noticed a hard tender nodule on his right thumb, which appeared one week after he had skinned a rabbit. Twenty-four hours later he developed fever, nausea, and later the nodule became pustular and ulcerated. This has persisted to the present time, though it is improved. He then noticed enlargement of the glands in his right axilla. On physical examination the right axillary glands were found greatly enlarged, about the size of a lemon. There was also a purplish macular

eruption over the back. The epitrochlear gland on the right side was about the size of a large bean. He had little fever, never over 100 degrees. The blood Wassermann was negative, and blood serum showed agglutination for *B. tularensis* in dilutions of 1-50, 1-100, 1-200.

The second patient, a white female aged 37 years, had cleaned a rabbit and 24 hours later noticed general malaise, fever, anorexia, and nausea. This persisted for one week, and the patient was treated for grippe. At the end of the week the middle finger of the left hand began to hurt. It became swollen, hard, red and then developed a small pimple which ulcerated. Fever continued until one week ago. A pigmented lesion appeared on the hands and the glands enlarged in the left axilla. There were no other skin lesions. The temperature reached a maximum of 101 degrees. Agglutination was positive in dilutions of 1-50, 1-100, 1-200 for *B. tularensis*. Dr. J. G. Stulb briefly discussed the case. Dr. J. H. Musser spoke of the four types of the disease, namely ulceroglandular, glandular, oculoglandular and typhoid (septicemic). All except the septicemic type have been seen in Charity Hospital.

Dr. Philip Jones presented a white male about 50 years of age who had been admitted to the hospital with orthopnea, general anasarca and marked anemia. The blood count showed 550,000 erythrocytes with a color index of 2. He showed a large liver and an enlarged heart. He received a blood transfusion and then was fed pancreas and full diet. The reticulocytes rose from 3 per cent to 11 per cent in 11 days. He remained on the pancreas diet for six weeks, but during the last three weeks there was no improvement in the blood condition. He was then put on liver, and the erythrocytes gradually rose to 3,500,000, when he was discharged. He returned again and this time because of history of diarrhea, with large bulky white stools, he was put on a sprue diet of protein, milk, gelatine, and bananas. Two weeks ago he returned complaining of weakness, numbness and tingling in the legs. The blood count was essentially normal. The condition was regarded as a sub-acute combined degeneration of the cord, though the absence of the vibratory sense was questionable. At all times this patient's gastro-analysis showed plenty of free HCL from 25 to 65. The question was as to the diagnosis between sprue and pernicious anemia. Dr. Daspit discussed the neurological aspect of the case. Dr. Jamison expressed his opinion that the diagnosis of pernicious anemia was very difficult with the presence of HCL. His opinion was that liver was

as good for sprue as for pernicious anemia, and regarded the case as one of sprue. Dr. Musser called attention to the early beneficial results of pancreas in this case, and thought that any of the visceral meats could be regarded as blood regeneratives.

A motion picture film was then shown through the compliments of Mr. Storey, showing the effect of drugs on gastro-intestinal motility.

Dr. Musser reported that the staff had been granted permission to hold evening meetings every other month, alternating with luncheon meetings at the Jung Hotel.

The annual election of officers followed. All officers were elected unanimously. Dr. J. A. Storck was elected Chairman, Dr. Adolph Noah was elected Vice-Chairman, and Dr. I. L. Robbins, Secretary.

WILLARD R. WIRTH, M. D.

THE CHARITY HOSPITAL SURGICAL STAFF.

After the usual business, the scientific session was opened by Dr. George Cronan who read the synopsis of the first case. This was a colored female who had been admitted to the gynecological service of the hospital. A few days after admission she was sent to the rest ward, and remained there about 38 days. At the end of this time she had shown very little or no improvement and was transferred back to the old service. Operation revealed a large cyst full of pus. She died of general peritonitis. Dr. C. H. Tyrone explained that the mass in this case was very high and therefore, not suitable to exploration from below. It was further pointed out that these cases differ from the ordinary cases, in that they are infected ovarian cysts and the temperature does not subside on resting. Under these conditions exploration becomes imperative.

The second case was that of a four months old white infant. After having been treated in the pediatric service for a while a diagnosis of bilateral mastoiditis was made and bilateral mastoidectomy performed. The child died 24 hours after operation. In the discussion that followed Dr. J. P. Palermo expressed an opinion that it is quite unusual to see mastoid infections in infants

of this age, as these cells are not developed at this time. This opinion was concurred in by Dr. C. L. Cox. Although pus was found in this case the condition was thought to be an antrum infection.

An interesting case of intense jaundice over a period of several days was next presented. The patient was a white male, 45 years of age, who had suffered with indigestion for 12 years. He had been very carefully worked up, and among other things was found to have an icterix index of 100. Roentgen-ray showed no dye in the gall-bladder. At operation he was found to have a stricture in both the cystic and common ducts, the latter at the ampulla of Vater. The gall-bladder was removed and a T drain put in the common duct through which great quantities of bile drained over a period of 54 days, the patient finally dying. Dr. Alton Ochsner who read the synopsis of this case pointed out (1) that one must always bear in mind the possibility of malignancy of the head of the pancreas in these cases, (2) that ether pneumonia usually comes on within the first 48 hours postoperatively, and (3) lung abscess may come on as the result of embolism. This latter condition may result as early as 8 to 12 hours postoperatively.

The final case was that of a negro female who had been admitted to the hospital after having been ill with intestinal obstruction for over 48 hours. She was very toxic and in very poor condition on admission. Fifty c.c. of perfringens antitoxin was given and a short time later she was explored. The obstruction was found in a mass of adhesions in the pelvis. It was not necessary to resect. Instead an ileostomy was performed through which a great deal of material drained. She died about 15 hours later. Dr. H. B. Gessner stressed the great importance of recognizing these cases early, and doing something almost as early. Dr. F. L. Loria pointed out that the case was on her last leg when admitted; as a matter of fact practically hopeless. He also recalled some experimental work by Martin recently, which tended to show that perfringens antitoxin in these cases was valueless. Dr. Alton Ochsner explained that in view of clinical experience the antitoxin should be given in these cases, however admitting that it is not

certain that it is of any benefit. He next explained the value of roentgen-ray in the diagnosis of intestinal obstruction, and said that the fluid level may be detected as early as eight hours after the onset of the symptoms. The subject of digestive ferments was next dwelled on by Dr. Oschner. The reformation of adhesions can be prevented in 90 per cent of cases in the experimental animal. Dr. O. C. Cassegrain next stressed the matter of frequent enemas. If they continue to return clear he advises exploration.

FRANK L. LORIA, M. D.

VICKSBURG SANITARIUM AND CRAWFORD
STREET HOSPITAL STAFF MEETING,
DECEMBER 9, 1929.

Abstract: Carcinoma of the Rectum.—Dr. A. Street.

The patient, a white male, aged 64, clergyman, married, was admitted to the hospital October 1, 1929.

Chief Complaint—Constipation and partial incontinence of feces. Constipation has sharply increased during the last eight months; has one to three passages of jelly-like substance involuntarily each day; bowels will pass feces only after very large doses of cathartics. Has much right lower abdominal pain and soreness, and has had it for about twenty years. No blood in the stools. No bladder symptoms. No fever. Appetite and digestion good; no loss of weight.

Physical Examination—General physical examination shows nothing remarkable. Tonsils and most of teeth have been removed. Pupils equal and react well to light and accommodation. Blood pressure 140/90. Digital examination of rectum shows a firm mass partially occluding the lumen, just above level of prostate. Mass not fixed.

Proctoscopic Examination—The sigmoidoscope was passed through the involved segment. Rectum above growth appeared normal. The in-

involved segment was about one and one-half inches long; the mucosa of this segment presented papillary areas which bled easily and were soft and friable. Sections easily taken with punch from upper and lower margins and mid-portion.

Laboratory—Urine showed a trace of albumin and some granular casts. Blood: Hemoglobin, 82; leukocytes, 8,600; with normal differential; no malaria found; Wassermann and Kahn tests negative.

Tissue Pathology: Papillary adenoma; much inflammatory tissue.

Procedure—In view of the clinical picture, it was felt that the diagnosis was carcinoma, and that the specimens removed through the proctoscope were from benign areas. As colostomy was contemplated, more sections were not removed.

Operation—On October 8, 1929, with a left muscle splitting incision, the hand was introduced and liver carefully palpated; no metastases were felt in it. There were palpable lymph nodes along the abdominal aorta. The middle portion of the rectum contained a cylindrical growth, very indurated, partially fixed, and extending from slightly below promontory to the rectovesical fold. The peritoneum of the recto-vesical fold was studded with hard nodules, about one-fourth inch in diameter. Permanent colostomy was done.

Patient did not improve following colostomy and death occurred November 17.

Autopsy showed the tumor to have grown so rapidly as to entirely obliterate the pelvic cavity; lumen of rectum was entirely closed for one inch. This extension had occurred since the operation a little over five weeks previously. Metastases were present in the abdominal lymph nodes, in the liver and in the ribs.

Microscopic examination of tissue from growth and metastases showed gelatinous adeno-carcinoma: Group IV.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY.

CALENDAR.

January 3—Physiology Seminar, Tulane Medical School, 5 P. M.

January 6—Eye, Ear, Nose and Throat Hospital Staff, 8 P. M.

January 8—Touro Infirmary Staff, 8 P. M.

January 10—Physiology Seminar, Tulane Medical School, 8 P. M.

January 10—French Hospital Staff, 8 P. M.

January 10—Medical Reserve Corps Branch School, 8 P. M.

January 13—*Orleans Parish Medical Society*. Installation Meeting.

January 14—Baptist Hospital Staff, 8 P. M.

January 15—Charity Hospital Surgical Staff, 8 P. M.

January 16—I. C. R. R. Hospital Staff, 12 Noon.

January 16—Eye, Ear, Nose and Throat Club, 8 P. M.

January 17—Physiology Seminar, Tulane Medical School, 5 P. M.

January 17—Mercy Hospital Staff, 8 P. M.

January 20—Hotel Dieu Medical Staff, 8 P. M.

January 21—Charity Hospital Medical Section, Jung Hotel, 12 Noon.

January 24—Physiology Seminar, Tulane Medical School, 5 P. M.

January 24—Medical Reserve Corps Branch School, 8 P. M.

January 27—*Orleans Parish Medical Society*.

January 31—Physiology Seminar, Tulane Medical School, 5 P. M.

SECRETARY'S REPORT.

During the month of December the Society held one joint clinical meeting with the United States Marine Hospital Staff, Dec. 9, and one special meeting for the Stanford E. Chaillé Memorial Oration on Dec. 6.

At the clinical meeting the following interesting program was given:

1. Naso-pharyngeal Syphilis

Presentation of four cases, Ass't. Surgeon
O. F. Hedley, USPHS.

2. The Treatment of Chronic Arthritis

Presentation of five cases, Ass't Surgeon
K. R. Nelson, USPHS.

3. Chronic Osteomyelitis of the Jaw

Presentation of case, Dental Surgeon
O. Paquin, Jr., USPHS

4. Ruptured Duodenal Ulcer without previous gastric symptoms

Presentation of case, Ass't. Surgeon D. P.
Ross, USPHS

5. Pyelitis

Presentation of three cases, Ass't. Surgeon
W. F. Ossenfort, USPHS

At the Stanford E. Chaillé Memorial Oration Dr. Willard C. Rappleye, Director of Study of the Commission on Medical Education, New Haven, Connecticut, was the orator, and gave a very interesting talk on "The Doctor and the Public."

There was a very good attendance at both meetings.

The regular scientific meeting scheduled for December 23 was dispensed with an account of confliction with the holidays.

During the first week of December the Society held its annual Longer Life Week. The Committee in charge of this health week worked hard, and the Society extends its thanks to them. The Society also wishes to express its thanks to the members taking part in the program making addresses during this week.

The annual election of Officers for 1930 was held Saturday, December 14. As there was no opposition very little interest was taken in the voting. The following officers were elected:

President—Dr. C. Greenes Cole.

First Vice-President—Dr. Emmett L. Irwin.

Second Vice-President—Dr. J. T. Nix.

Third Vice-President—Dr. Walter J. Otis.

Secretary—Dr. H. Theodore Simon.
Treasurer—Dr. John A. Lanford.
Librarian—Dr. Daniel A. Silverman.

ADDITIONAL MEMBERS BOARD OF DIRECTORS.

Dr. Erasmus D. Fenner
Dr. I. M. Gage
Dr. Louis Levy

Following the election the Annual Dinner of the Society was held at the Chess Club. The dinner was a testimonial dinner in honor of Dr. J. H. Musser, President of the American College of Physicians, and Dr. C. Jeff Miller, President-elect of the American College of Surgeons.

The third year of group insurance in the Orleans Parish Medical Society began December 5. The members carrying the insurance have been requested to send in their checks to cover the annual premium in order to facilitate the work in the office which is necessitated by sending out bills for each quarter.

The dues for 1930 are payable now. The membership is again requested to send in their annual dues, if possible, to curtail the work in the office.

The Installation Meeting to be held Monday, January 13, is expected to be very well attended, especially since the Women's Auxiliary has been organized in Orleans Parish.

It is with regret that we report the death of one of our Active Members, Dr. Charles V. Unsworth.

TREASURER'S REPORT

November

Actual book balance 10/31/29.....	\$ 232.50
Receipts	796.92
	<hr/>
	\$1,029.42
Expenditures	637.00
	<hr/>
Actual book balance 11/30/29.....	\$ 392.42

LIBRARIAN'S REPORT

Twenty-eight books have been added to the Library during November. Of these 22 were re-

ceived from the New Orleans Medical and Surgical Journal, and 6 by gift. These additions bring the total number of books in the Library to 15,200.

This is the busiest season in the year in the Library work. Reference calls are constant. The reading rooms are in use all day.

The Library has helped in Longer Life Week, by furnishing material for the talks to clubs and schools, statistics on the economic cost of illness, mortality from preventable diseases, etc.

H. THEODORE SIMON, M. D.,
Secretary.

NEW BOOKS—NOVEMBER, 1929.

Trumper—Memoranda of toxicology. 1929.
Joslin—Diabetic manual. 1929.
Ringer—Clinical medicine for nurses. 1929.
Rogers—Recent advances in tropical medicine. 1929.
Tweedy—Tropical obstetrics. 1929.
Far Eastern Assn. of tropical medicine Trans. 1927. v. 2.
Humphris—Artificial sunlight and its therapeutic uses. 1929.
Terry—Introduction to study of human anatomy. 1929.
Rees—Health of the mind. 1929.
Hala—Principles of pathology. 1929.
Fulkerson—Gynecology. 1929.
Cope—Some principles of minor surgery. 1929.
Chandler—Hookworm disease. 1929.
Walsh—History of nursing. 1929.
Heberden—Introduction to study of physic. 1929.
Buchanan—Physical and biochemistry of bacteria. 1928.
Gunn—Pharmacology and therapeutics. 1929.
Marcovici—Handbook on diet. 1928.
Allemann—Medical interpreter. 1929.
Deaver—Surgical anatomy of human body. v. 2. 1926.
Rockefeller foundation—Annual report. 1928.
Blanc—Cystographie. 1926.
Darrach—Epidemic encephalitis. 1929.
American Pediatric Assn. Trans. 1929.
Frank—Female sex hormone. 1929.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

NOTICE TO MEMBERSHIP

Attention is called to the fact that the annual dues of the Louisiana State Medical Society for 1930 are \$7.00 instead of \$4.00. In order that you may be familiar with some of the reasons for this increase I desire to direct your attention to the following:

For the past several years the President and other officers of our State Society, in submitting their report, have impressed the necessity and need of increased finances. This was deemed advisable not only from our past experiences, but for future activities of our Society. Also our Budget and Finance Committee, who has entire jurisdiction of our finances, have from time to time impressed upon the organization the close approximation of our receipts and expenditures.

During the past several years the work of our Committee on Public Policy and Legislation has been markedly increased, and they have found their activities considerably handicapped by the lack of suitable funds for their expenditures. The Executive Committee found it necessary last year to levy a special assessment of \$1.00 per capita to cover expenses of this Committee. Only a small percentage of the members responded to this assessment.

During the past two years the Society has been planning for the edition of the History of the Louisiana State Medical Society, which is being edited by Dr. Rudolph Matas. They were unable to finance the expenses for this plan in toto, which was supported by individual subscriptions to the book and by individual private subscriptions.

Your attention is called to the increased evaluation of our Journal, manifested by the additional number of original and scientific papers, increased number of pages, and other added attractions to enhance its scientific aspect. The Journal has thus increased in size and reading matter with the distinct change in its physical appearance for the better. This required additional expenditure of money, yet our organization has not been able to increase their allotment made to our Journal for this purpose for several years.

Various other phases of work which have been recommended have been found inexpedient owing to the lack of finances. Constructive plans for educational purposes and other plans of instructive medical activity have had to be held in abey-

ance. However, many added features of organized medicine for the individual good of its members have been put into effect, and yet no extra budget has been made for the care of such expenditures as may have been essential. The Society has thus been functioning for a long period, increasing its activities and benefits to its members and yet the annual dues continued to remain the same.

At the last meeting of the House of Delegates, upon recommendation of our Retiring President, the increase of dues was unanimously voted. They felt that this small increase in dues was incomparable with the services being rendered to the individual members and to take care of prospective plans for the future. It was the feeling that each and every member of the State Society would be desirous of taking a part in this work and aiding in what might be accomplished for the organization as a whole. Our State dues have been small in comparison with other State Medical Societies. It is a well known business fact that in the expansion or increase of benefits of an organization more money is required.

I hope that the above recitation of facts will give you some information as to the reasons found by the House of Delegates for the increase of our annual dues.

P. T. TALBOT, M. D.,
Secretary-Treasurer.

The following Parish Medical Societies have elected officers for 1930:

Bienville Parish: President, Dr. R. C. Ferguson, Arcadia; Vice-President, Dr. O. L. Kidd, Gibsland; Secretary-Treasurer, Dr. J. N. Blume, Arcadia; Delegate, Dr. J. L. Wade, Arcadia; Alternate, Dr. C. C. Allums, Ringgold.

Claiborne Parish: President, Dr. J. W. Featherstone, Homer; Vice-President, Dr. C. O. Wolff, Haynesville; Secretary-Treasurer, Dr. E. A. Campbell, Homer; Delegate, Dr. J. R. Turner, Homer; Alternate, Dr. F. Palmer, Homer.

DeSoto Parish: President, Dr. H. P. Curtis, Mansfield; Vice-President, Dr. B. K. Parrish, Mansfield; Secretary-Treasurer, Dr. D. C. McCuller, Mansfield; Delegate, Dr. W. B. Hewitt, Mansfield.

East and West Feliciana Bi-Parish: President, Dr. Glenn J. Smith, Jackson; Vice-President, Dr. S. L. Shaw, Cinton; Secretary-Treasurer, Dr. E. M. Toler, Clinton; Delegate, Dr. W. Lea, Jackson.

Lafourche Parish: President, Dr. I. J. Boulet, Lockport; Vice-President, Dr. L. E. Meyer, Thibodaux; Secretary-Treasurer, Dr. P. H. Dansereau, Thibodaux; Delegate, Dr. C. J. Barker, Thibodaux; Alternate, Dr. L. E. Meyer, Thibodaux.

Rapides Parish: President, Dr. J. A. White, Alexandria; Vice-President, Dr. J. A. Packer, Alexandria; Secretary-Treasurer, Dr. B. H. Texada, Alexandria; Delegates, Drs. R. O. Simons, J. H. Landrum, Dr. E. DeNux; Alternates, Drs. J. N. Thomas, J. W. Phillips, M. H. Foster.

Terrebonne Parish: President, Dr. R. W. Collins, Houma; Vice-President, Dr. J. B. Duval, Houma; Secretary-Treasurer, Dr. S. F. Landry, Houma; Delegate, Dr. T. I. St. Martin, Houma.

Natchitoches Parish: President, Dr. J. P. Pratt, Natchitoches; Vice-President, Dr. C. R. Reed, Natchitoches; Secretary-Treasurer, Dr. W. W. Knipmeyer; Delegate, Dr. W. W. Knipmeyer, Natchitoches; Alternate, Dr. R. S. Roy, Natchitoches

CHARLES V. UNSWORTH

Whereas, God in His all-wise and righteous providence removed from us by death our beloved brother and co-laborer, Charles V. Unsworth, we the Seventh District Medical Society of Louisiana in regular meeting at Oakdale, La., bow in reverent and humble submission to His holy will.

Our hearts are sad because we will miss his valuable counsel, advice and willing hand in the great work in which we are engaged.

We cannot recount all the virtues of our friend and co-laborer, for they were many, and so beautifully exemplified for a long term of years.

It was his good fortune for many years to occupy position of great honor and trust.

We love to think that the service of Charles V. Unsworth was not half-hearted. He put his whole soul into his work and was ready and willing at all times to respond to the many calls for his time and talents.

In full realization of what his death will mean to the Louisiana State Medical Society, we, the members of the Seventh District Medical Society, adopt the following resolutions, as expressive, in part, of what is in our minds and hearts:

(1) That we bow in reverent and humble submission to the divine will in this dispensation of God's providence.

(2) That in the death of Charles V. Unsworth the Louisiana State Medical Society has lost one of its most loyal, exemplary and distinguished members.

(3) That we feel deeply the loss of our departed brother and co-laborer and fully realize the loss we have sustained in being deprived of his valuable counsel, advice, co-operation and sympathetic fellowship.

(4) That we extend to his family our heartfelt love and sympathy in this time of sorrow and bereavement, and pray that our God will ever sustain, lead and comfort them.

(5) That a copy of these resolutions be presented to the Society, one to the family and one to the Secretary of the Louisiana State Medical Society.

CLAUDE A. MARTIN, M. D.,
Chairman;
D. C. ILES, M. D.
T. H. WATKINS, M. D.

DR. JOHN SPELMAN

The many friends and former associates of Dr. Spelman were shocked to hear of his unexpected death in Pittsburgh. No details of his illness had been received on going to press. Dr. Spelman was for six years Superintendent of the Touro Infirmary. He was active in charitable and sociologic matters in both the city and State, and his leaving for wider fields two years ago was regretted by all who had come in contact with this splendid type of physician.

SOUTHERN BRANCH OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

The first fall meeting of the Society for Experimental Biology and Medicine was held the last of October in the Richardson Memorial. Twelve papers were read at the meeting, all of them representing new observations on the scientific aspects of medicine.

There were present at the meeting fifty-three attendants. Included among the guests were Dr. J. Dormal of Belgium, a Belgian Relief Fellow, and Drs. Thomas E. Hunt and Franklin DuBois of the University of Alabama.

The Southern Branch of the Society, which has its headquarters in New York, and was founded by Dr. S. J. Meltzer, was started in Tulane University on the 29th of January, 1925. It is one of ten branches now actively functioning in the United States and in Peking, China. The Southern Branch covers the South, and certain other medical centers have become interested in the work that is being carried out by this organization, which has contributed 101 scientific contributions in the Proceedings of the Society.

MEETING OF ST. TAMMANY PARISH MEDICAL SOCIETY

The Society met on Friday night, December 13, at 8 P. M., in Covington, at New Southern Hotel. The Vice-President, W. F. Stevenson, presided in place of the President, T. Roland Young, who officiated as Secretary.

The attendance was very good and the following doctors answered roll call: F. F. Young, H. E. Gauthreaux, L. Roland Young, H. D. Bullock, J. F. Buquoi, G. McG. Stewart, and W. L. Stevenson of Covington; R. B. Paine, A. G. Maylie, Lawrence R. Young of Mandeville, and J. K. Griffith, J. K. Polk and F. R. Singleton of Slidell.

After the reading and adoption of minutes, business matters were taken up and then the election of officers was held. Dr. H. E. Gauthreaux was honored with the presidency, J. K. Griffith, Vice-President, and H. D. Bullock, Secretary-Treasurer.

R. B. Paine, with F. F. Young alternate, were elected delegates to the annual State Medical Convention to be held in 1930 in Shreveport, La. Dr. Young is on the program to address the State meeting at this time.

Dr. Lawrence Randolph Young of Mandeville was unanimously elected a member of the St. Tammany Parish Medical Society, heretofore having been a member of the Arcadia organization. The members at the next meeting, at which time the officers will be installed, will be banqueted at the new Southern Hotel, Covington. The President of the State Medical Association and other prominent doctors will be invited guests. This meeting will be held on the night of January 10.

L. ROLAND YOUNG,
Pres. and Act. Sec.-Treas.

MEETING OF THE EAST AND WEST FELICIANA PARISH SOCIETIES

The East and West Feliciana Bi-Parish Medical Society met in Clinton, La. Dr. Isidore Cohn of New Orleans was the essayist. Dr. Cohn gave a very instructive talk on "Clinical Chest and Abdominal Complications," which was discussed by physicians present. Dr. Cohn was voted a vote of thanks. Physicians present were: Drs. Isidore Cohn, Fields, Lorio, Chamberlin, Cook, McMahon, Smith, Miller, Lea, Gil, Merrell, Waltrip, Shaw, Wilkins, Sewell and Toler.

The following officers were elected for 1930: President, Dr. Glenn J. Smith; Vice-President, Dr. S. L. Shaw; Secretary-Treasurer, Dr. E. M. Toler. Following the meeting a banquet was held in the Rist Hotel.

MORTALITY STATISTICS

The Department of Commerce has issued a bulletin detailing the Louisiana mortality statistics for the year 1928. The death rate during this year was 1281.4 per 100,000 population, as compared with 1234.5 in 1927. There was an increase in the death rate for the following principal causes: diseases of the heart, 174 to 190; nephritis, 101 to 114; cerebral hemorrhage, 65 to 70; cancer, 67 to 69, and diabetes mellitus, 11.7 to 12.3 per 100,000. The rate for influenza was more than double of that of the preceding year 33 to 66. Increase in all forms of pneumonia occurred from 81 to 99. A rather striking feature of the report is the increase in death rate from automobile accidents, excluding collisions with railroad trains and street cars, which jumped from 15.3 to 17.8. Of great significance is the decrease in the rates of the diseases which are considered to be preventable. Tuberculosis fell from 98 to 92, diarrhea and enteritis of infants from 39.8 to 27.2, measles, diphtheria, whooping cough, typhoid fever, malaria, were all diminished from 2 to 5 per 100,000 population. One of the sad features of the report is the fact that there has been no decrease worth mentioning in the death rate from puerperal septicemia and puerperal causes. They still remain very much higher than they should in a community highly civilized and well educated.

WEEKLY HEALTH INDEX OF NEW ORLEANS

The weekly health indices that have been received and have not yet been published give the following information. During the week ending November 16, in New Orleans, the total deaths numbered 134, with the death rate of 16.3. Thirteen of these deaths were in children under 1 year of age, giving an infant mortality of 65. This is the lowest death rate that has occurred in the city for many weeks, and may be contrasted to the corresponding week in 1928 when there were 169 deaths with a rate of 20.6. The next week, which ended November 23, finds a still present remarkably low death rate. During this week there were 138 deaths with a rate of 16.8, with but 10 children under 1 year of age dying during this period. The death rate in the next week jumped up considerably. The official report for the week ending November 30 showed that there were 169 deaths in New Orleans with a

rate of 20.6. The infant mortality rate was 74. The corresponding week of 1928 there were, however, 194 deaths with the rate 23.6. The report for the first week of December states that there were 179 deaths with rate of 21.8. Part of this increase may be attributed to the large number of small infants who died; 22 died in this period with a death rate of 109. During the corresponding week of 1928 the death rate was 18.3, total deaths numbering 150.

Members of the faculty of the Graduate School of Medicine of the Tulane University of Louisiana attending the meeting of the Southern Medical Association held at Miami, Fla., during the week beginning November 18, 1929, and presenting papers were as follows:

Prof. Elizabeth Bass—"A Case of Primary Tuberculosis of the Tongue Now Cured."

Prof. M. Earle Brown—"A Surgical Suggestion for the Glaucoma Problem."

Prof. Isidore Cohn—"Diminishing Morbidity and Mortality."

Prof. Allan S. Eustis—"The Relationship of Intestinal Toxemia to Allergy."

Prof. C. S. Holbrook—"Encephalitis Following Vaccination; Report of Two Cases."

PROGRAM FOR FIRST INTERNATIONAL MENTAL HYGIENE CONGRESS ANNOUNCED

Many subjects are listed on the program of the First International Congress on Mental Hygiene, just received from John R. Shillady, Administrative Secretary, 370 Seventh Avenue, New York City. Practically all aspects of mental hygiene will be covered at the Congress. Details of the program have been worked out by a committee of which Dr. Frankwood E. Williams, medical director of the National Committee for Mental Hygiene, is chairman, collaborating with correspondents in many countries. Topics are now ready for publication, and are contained in an informing, 33-page Preliminary Announcement,

obtainable from headquarters office. The Congress will be held in Washington, D. C., May 5-10, 1930. As some of our readers know, President Hoover has accepted the honorary presidency of this Congress, and delegates are expected from more than thirty countries.

CORRESPONDENCE.

Alexandria, La., December 12, 1929.

Editor, New Orleans Medical and Surgical Journal, New Orleans, La.

Dear Sir:

In the discussion of Dr. Pierson's paper on "Legal Sexual Sterilization of Inmates of State Institutions," which appeared in the December, 1929, issue of the Journal, one of the individuals discussing this paper said in part:

"Doctor, I wish you wouldn't keep quoting Dr. Treadgold (Tredgold). He has been dead for the last twelve years * * *"

This is an erroneous statement. Dr. A. E. Tredgold is alive and remains the leading authority on mental deficiency in the British Isles, and perhaps the leading authority in the entire world today. His opinion regarding sterilization remains unchanged. He states:

"* * * that if every defective in existence a generation ago had been sterilized, the number of defectives today would not have been appreciably diminished, and that if every defective now existing were to be sterilized, the result a generation hence would be insignificant."

This extract is taken from an article by him in which his views on sterilization were concisely stated. An abstract of this article appeared in a letter from the London correspondent of the J. A. M. A. 87:17 (October 23) 1926.

This letter is written in an effort to keep the record straight, and I ask that you kindly publish same.

Very truly yours,

EDWIN M. LEVY, M. D.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

EAST MISSISSIPPI STATE HOSPITAL.

In addition to the numerous improvements that have been made at the East Mississippi State Hospital, Meridian, the following program has been laid out and work is now under way to provide a complete power plant, ice plant, cold storage, kitchen, baker shop, and vegetable house, all completely equipped; new tunnels throughout the institution are now under construction, and new plumbing is to be installed from engine room to radiators. Improvements are also to be made in the laundry and lighting system. Dr. M. J. L. Hoye is superintendent.

Dr. H. H. Ramsey, Superintendent of the Mississippi School and Colony for the Feeble-minded at Ellisville, writes the following:

"I am pleased that through the foresight and courtesy of Dr. W. D. Beecham, Director of the Forest County Health Department at Hattiesburg, the first mental clinic for school children will be held at the offices of the health department in Hattiesburg on December 14. In this clinic retarded and problem children will be given the mental test and psychiatric examination to determine the cause of their backwardness, maladjustment, or delinquency.

"I am making an effort to have passed in the next legislature which convenes in Jackson on January 7, a bill providing for one mental clinic connected with the institution here. This clinic would consist of a psychiatrist, a psychologist and a social worker, all specially trained in this field. This movement will not eliminate children from the classes in public schools, but by dealing with them early, we will have an opportunity to prevent their later social and economic loss as citizenship failures. As you know, the feeble-minded child in classes in public school not only handicaps the normal child, but is himself a future social and economic loss which runs into big money. Mississippi has led the South in many great forward movements and I am hoping that we shall have the honor in being the first State in the South to provide statewide mental clinics in the public schools."

VICKSBURG HOSPITAL.

At the regular monthly meeting of the Staff of the Vicksburg Hospital, the following program was presented:

1. Resume of Industrial Surgical Reports compiled by the American College of Surgeons.—Dr. I. C. Knox.

2. Resume of Literature on Ascites.—Dr. W. H. Parsons.

3. The Use of Lipiodol in the Diagnosis of Spinal Cord Tumors.—Dr. G. P. Sanderson.

4. Discussion of the Causes and Treatments of Nasal Catarrh, Especially in Children.—Dr. E. H. Jones.

It has been announced that Dr. W. H. Weimar, Vicksburg, has been elected to the Staff of the Vicksburg Hospital.

TRI-COUNTY MEDICAL SOCIETY.

The regular meeting of the Tri-County Medical Society was held at Brookhaven, December 10. The following officers for the coming year were elected: President, Dr. W. L. Little, Wesson; Vice-Presidents, Dr. E. H. Deberry, Hazlehurst, Copiah County; Dr. O. N. Arrington, Brookhaven, Lincoln County; Dr. R. E. Sylvestein, Tylertown, Walthall County; Dr. T. F. Conn, Silver Creek, Lawrence County; member of Medical Legal Committee Dr. H. R. Fairfax, Brookhaven; Secretary and Treasurer, Dr. J. R. Markette, Brookhaven.

Dr. R. S. Savage, recently located in Brookhaven, was married November 6, to Miss Ruth Brock of Magnolia.

Dr. F. E. Collins of Brookhaven is at Touro Infirmary, having undergone a surgical operation. His many friends are hoping that he will be able to resume his practice in a short time.

Dr. Wallace L. Britt has announced the removal of his office from the Century Building to the second floor of the Standard Life (Plaza) Building, Jackson.

Acknowledgement is made of the following reprints received during the month: "Open Operation in Fractures of the Shaft of the Femur," Dr. J. H. Rush, Meridian, and "Indications for Operation in Acute Mastoiditis," by Dr. Robin Harris, Jackson, Mississippi.

CLARKSDALE AND SIX COUNTIES MEDICAL SOCIETY.

The Fifty-fifth Semi-Annual Session of the Clarksdale and Six Counties Medical Society was held at Clarksdale on the afternoon and evening of November 6, with fifty-two members and twenty visitors present.

Officers for 1930 were elected as follows: President, Dr. L. B. Austin, Rosedale; Vice-Presidents, for Bolivar County, Dr. S. H. Brevard, Deeson; for Coahoma County, Dr. A. W. Rhyne, Coahoma; for Tallahatchie County, Dr. J. L. Harris, Swan Lake; for Tunica County, Dr. W. W. Nobles, Tunica; Secretary and Treasurer, Dr. D. V. Galloway, Clarksdale; member of the Board of Censors, Dr. T. G. Hughes, Clarksdale.

By vote of the Society, a telegram of sympathy was sent to Dr. J. P. Hitt, ill at the Baptist Hospital in Memphis.

A committee, consisting of Drs. S. W. Glass, chairman, T. M. Dye and E. LeRoy Wilkins, was appointed to draw up resolutions memorializing the loss to the Society through the death of Dr. R. T. Stapleton of Tunica.

Three new members were ordered enrolled—Doctors G. C. Denson, Vance; Julius Levy, Clarksdale, and Robert T. McLauren, Clarksdale.

The Scientific Program was carried out as follows:

Tularemia.—Dr. H. L. Shannon, Clarksdale.

Dysentery.—Dr. D. O. Pierce, Jonestown.

Acute Intestinal Obstruction; Importance of Early Diagnosis.—Dr. S. D. Robinson, Clarksdale.

Injuries and Diseases of the Membrana-Tympani.—Dr. D. H. Griffin, Clarksdale.

President's address.—Dr. Hal Johnson, Dun*dee.

Proteotherapy.—Dr. J. W. Gray, Clarksdale.

Vincent's Infection.—Dr. G. G. Rudner, Memphis.

Vaccines and Serum Therapy.—Dr. Tom³ Mitchell, Memphis.

Spinal Anesthesia in Abdominal Operations.—Dr. Andrew B. Carney, Clarksdale.

Nasal Reflex Asthma.—Dr. R. W. Hooker, Memphis.

The sessions of the Society closed with a delightful banquet at which Dr. E. LeRoy Wilkins served as Toastmaster and Dr. Hugh A. Gamble, President of the Mississippi State Medical Association was the principal speaker. The next meeting of the Society will be held on March 26, 1930.

Dr. Hardie R. Hays has announced the opening of his offices at the Capitol City Clinic, 941 Robinson Street, Jackson, Mississippi. Dr. Hays

will give special attention to genito-urinary diseases and syphilis. After January 1st, Dr. Hays will also maintain an office in the new Merchants Bank Building.

COMMITTEE ON LYE LEGISLATION.

Dr. E. F. Howard of Vicksburg, member for Mississippi of the Committee on Lye Legislation of the American Medical Association, Section of Laryngology, has asked each County Society to get actively behind the "Lye Bill" which is the proposed uniform State Law to safeguard the distribution of lye and other caustic substances in containers for household use, as prepared under the direction of the Committee on Lye Legislation, of which Doctor Chevalier, Jackson, is chairman.

Congress has passed a similar law to cover interstate traffic and the following states have already enacted legislation regulating the sale of lye and the laws in most of these states follow the provisions of the Uniform State Bill:

Alabama, Arizona, Colorado, Delaware, Florida, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, Oregon, Pennsylvania, South Carolina, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

It certainly behooves the doctors of Mississippi to see that the people of the State and especially the children are protected as provided by the proposed law. The bill to be presented to the Legislature is as follows:

A Bill to Safeguard the Distribution and Sale of Certain Dangerous Caustic or Corrosive Acids, Alkalis, and Other Substances in the State of Mississippi.

Be it enacted . . . (The phraseology of the enacting clause should conform to the phraseology customary in the State in which legislation is proposed) . . .

That is this act, unless the context or subject-matter otherwise requires.

A. The term "dangerous caustic or corrosive substance" means each and all of the acids, alkalis, and substances named below: (a) Hydrochloric acid and any preparation containing free or chemically unneutralized hydrochloric acid (HCL) in a concentration of ten per centum or more; (b) Sulphuric acid and any preparation containing free or chemically unneutralized sulphuric acid (H₂SO₄) in a concentration of ten per centum or more; (c) Nitric acid or any preparation containing free or chemically un-

neutralized nitric acid (HNO_3) in a concentration of five per centum or more; (d) Carbollic acid ($\text{C}_6\text{H}_5\text{OH}$), otherwise known as phenol, and any preparation containing carbollic acid in a concentration of five per centum or more; (e) Oxalic acid and any preparation containing free or chemically unneutralized oxalic acid ($\text{H}_2\text{C}_2\text{O}_4$) in a concentration of ten per centum or more; (f) Any salt of oxalic acid other than cerium oxalate and any preparation containing any such salt in a concentration of ten per centum or more; (g) Acetic acid or any preparation containing free or chemically unneutralized acetic acid ($\text{HC}_2\text{H}_3\text{O}_2$) in a concentration of twenty per centum or more; (h) Hypochlorous acid, after free or combined, and any preparation containing the same in a concentration so as to yield ten per centum or more by weight of available chlorine, excluding calx chlorinata, bleaching powder, and chloride of lime; (i) Potassium hydroxide and any preparation containing free or chemically unneutralized potassium hydroxide (KOH), including caustic potash and Vienna paste, in a concentration of ten per centum or more; (j) Sodium hydroxide and any preparation containing free or chemically unneutralized sodium hydroxide (NaOH), including caustic soda and lye, in a concentration of ten per centum or more; (k) Silver nitrate, sometimes known as lunar caustic, and any preparation containing silver nitrate (AgNO_3) in a concentration of five per centum or more, and (l) Ammonia water and any preparation yielding free or chemically uncombined ammonia (NH_3), including ammonium hydroxide and "hartshorn," in a concentration of five per centum or more.

B. The term "misbranded parcel, package, or container" means a retail parcel, package, or container of any dangerous caustic or corrosive substance for household use, not bearing a conspicuous, easily legible label or sticker, containing (a) the name of the article; (b) the name and place of business of the manufacturer, packer, seller, or distributor; (c) the word "POISON," running parallel with the main body of reading matter on said label or sticker, on a clear, plain background of a distinctly contrasting color, in uncondensed gothic capital letters, the letters to be not less than 24 point size, unless there is on said label or sticker no other type so large, in which event the type should be not smaller than the largest type on the label or sticker, and (d) directions for treatment in case of accidental personal injury by the dangerous caustic or corrosive substance: Provided, that such directions need not appear on labels or stickers on parcels, packages, or containers

at the time of shipment or of delivery for shipment by manufacturers or wholesalers for other than household use.

Section 2. No person shall sell, barter, or exchange, or receive, hold, pack, display, or offer for sale, barter, or exchange, in the State of Mississippi any dangerous caustic or corrosive substance in a misbranded parcel, package, or container, said parcel, package, or container being designed for household use; provided, that household products for cleaning and washing purposes, subject to this act and labeled in accordance therewith, may be sold, offered for sale, held for sale and distributed in this State by any dealer, wholesale or retail; provided further, that no person shall be liable to prosecution and conviction under this act when he establishes a guaranty bearing the signature and address of a vendor residing in the United States from whom he purchased the dangerous caustic or corrosive substance, to the effect that such substance is not misbranded within the meaning of this act. No person in this State shall give any such guaranty when such dangerous caustic or corrosive substance is in fact misbranded within the meaning of this act.

This act is not to be construed as applying to any substance, subject to the act, sold at wholesale or retail for use by a retail druggist in filling, or in dispensing in pursuance of a prescription by a physician, dentist or veterinarian; or for use by a chemist in the practice or teaching of his profession; or for any industrial or professional use or for use in any of the arts and sciences.

Section 3. Any dangerous caustic or corrosive substance in a misbranded parcel, package, or container suitable for household use, that is being sold, bartered, or exchanged, or held, displayed, or offered for sale, barter, or exchange, shall be liable to be proceeded against in any (insert name of state court having jurisdiction in condemnation procedures of like character) . . . Within the jurisdiction of which the same is found . . . (This clause is unnecessary if there is but one such court, but provision should be made for as wide jurisdiction as practicable, so as to facilitate procedure) . . . and seized for confiscation by a process of libel (the specification of the process to be followed should be made to conform to local State practice) . . . and if such substance is condemned as misbranded by said court, it shall be disposed of by destruction or sale, as the court may direct; and if sold, the proceeds, less the actual costs and charges, shall be paid over to the (insert name of proper State officer to receive such

funds) . . .; but such substance shall not be sold contrary to the laws of the State: Provided, however, that upon the payment of the costs of such proceedings and the execution and delivery of a good and sufficient bond to the effect that such substance will not be unlawfully sold or otherwise disposed of, the court may by order direct that such substance be delivered to the owner thereof. Such condemnation proceedings shall conform as near as may be to proceedings in (State as nearly as may be the procedure to be followed).

Section 4. Any person violating the provisions of this act shall upon conviction thereof be punished by a fine of not more than two hundred dollars, or by imprisonment for not more than ninety days, or by both such fine and imprisonment, in the discretion of the court;

Section 5. The (Insert name of proper State officer of department) . . . shall enforce the provisions of this act, and he is hereby authorized and empowered to approve and register such brands and labels intended for use under the provisions of this act as may be submitted to him for that purpose and as may in his judgment conform to the requirements of this statute: Provided, however, that in any prosecution under this act the fact that any brand or label involved in said prosecution has not been submitted to said (Insert title of officer named above) . . . for approval, or if submitted, has not been approved by him, shall be immaterial.

Section 6. Every (Insert name of proper prosecuting officer) . . . to whom there is presented, or who in any way procures, satisfactory evidence of any violation of the provisions of this act shall cause appropriate proceedings to be commenced and prosecuted in the proper courts, without delay, for the enforcement of the penalties as in such cases herein provided.

Section 7. This act may be cited as the Mississippi Caustic Poison Act (Insert year of enactment) . . ."

Section 8. This act shall take effect six months after the date of its enactment.

Section 9. That from and after the date when this act takes effect, the following acts and all other acts contrary to and inconsistent with the provisions of this act be and the same hereby are repealed: (Insert names of acts to be expressly repealed, if any) . . . but nothing herein contained shall be construed as modifying or interfering with the institution or continuance of any prosecution based upon any violation of law committed before the passage of this act, nor with the enforcement of the pen-

alties provided for any such violation by any act hereby repealed.

CONFERENCE OF HEALTH OFFICERS AND SANITARY INSPECTORS.

The Seventeenth Annual Conference of Health Officers and Sanitary Inspectors was held at the Edwards Hotel, Jackson, on December 11-12. Following is the program:

December 11, 9 A. M.

1. Meeting called to order—D. Felix J. Underwood.
2. Invocation—Rev. D. A. McCall
3. How to Formulate a Practical and Effective Program for County Health Departments—Dr. J. H. Janney, Indianola.
Discussion opened by Dr. J. T. Googe, Meridian.
4. Status of Mouth Hygiene Work in Mississippi—Miss Gladys Eyrych, Jackson.
Discussion opened by Dr. Wm. R. Wright, Jackson.
5. A Practical Program for a Part-time Health Officer—Dr. R. E. Giles, Mendenhall.
Discussion opened by Dr. W. S. Lampton, Magnolia.

LUNCH.

Afternoon Session—2:00 P. M.

1. A Practical Malaria Control Program for a County Health Department—Dr. R. D. Dedwylder, Cleveland.
Discussion opened by Dr. Mark F. Boyd, Jackson.
2. Practical Screening Technic—Dr. C. P. Googe, Greenwood.
Discussion opened by Mr. J. A. LePrince, Memphis, Tenn.
3. An Economical and Effective Program for the Control of Diphtheria by a County Health Department—Dr. J. A. Milne, Hazlehurst.
Discussion opened by Dr. T. J. Brown, Grenada.
4. Essential Epidemiological Investigations and Records for the Control of Preventable Diseases—Dr. H. L. McCalip, Yazoo City.
Discussion opened by Dr. H. C. Ricks, Jackson.

Evening Session.

Dr. Felix J. Underwood, presiding.

1. Address by Dr. W. A. Evans, Chicago, Ill.
2. County Tuberculosis Clinics—Dr. Henry Boswell, Sanatorium.

December 12, 9 A. M.

1. Address—Governor Theo. G. Bilbo.
2. The Role of the Preventorium in the Prevention of Tuberculosis—Dr. Henry Boswell, Sanatorium.

Discussion opened by Dr. B. T. Robinson, New Augusta.

3. Results of the Operation of the Standard Milk Ordinance.—Mr. A. W. Fuchs, Jackson.

Discussion opened by Dr. T. Paul Haney, Lexington.

4. The Education of the Negro Race in Public Health Measures—Dr. W. E. Noblin, Jackson.

Discussion opened by Dr. F. Michael Smith, Vicksburg.

LUNCH.

Afternoon Session—2:00 P. M.

1. Present Program and Plans for Future Development of the Bureau of Industrial Hygiene—Dr. J. W. Dugger, Jackson.
2. Better Birth and Death Registration of Mississippi—Dr. R. N. Whitfield, Jackson.
3. Explanation of Items on Monthly Report Forms—Dr. C. C. Applewhite, Jackson.

VISITORS TO THE MISSISSIPPI STATE BOARD OF HEALTH.

During October and November the following visited the State Board of Health for the purpose of looking over and studying the work being done in Mississippi:

Dr. T. A. Pincock, Department of Health, Winnipeg, Manitoba, Canada.

Dr. J. W. Williams, Parish Health Officer, Monroe, Louisiana.

Mr. A. West, Sanitary Inspector, Monroe, Louisiana.

Dr. M. C. Balfour, Associate Director, International Health Division of Rockefeller Foundation, New York, N. Y.

Dr. L. T. Browning, County Health Officer, Logan, W. Va.

Dr. Lewis C. Coleman, County Health Officer, Harrodsburg, Ky.

B. C. Johnson, Sanitary Inspector, Jackson, Ky.

John Ault, Jr., Sanitary Inspector, Grayson, Ky.

Dr. G. W. Kirk, Sheppardsville, Ky., County Health Officer.

Dr. W. H. Stewart, County Health Officer, Louisville, Ga.

Dr. A. A. Whittmore, State Health Officer, Bismarck, N. D.

Miss Lula M. Mitchell, Children's Bureau, Washington, D. C.

Dr. John A. Ferrell, International Health Division, Rockefeller Foundation, New York.

Dr. Wade H. Frost, Johns Hopkins University, Baltimore.

Dr. L. L. Lumsden, Sr. Surgeon, U. S. Public Health Service, Washington.

Dr. M. H. Jensen, Parish Health Officer, Lake Providence, La., visited the training station for health workers at Indianola.

His many friends throughout the state will be delighted to know that Dr. Felix J. Underwood, Executive Officer of the Mississippi State Board of Health, who has been ill for several months, is now able to be out and to devote a part of his time to official duties.

The Pike County Medical Society met in the Palm Room of the McColgan Hotel, McComb, December 5, with seventeen out of its twenty-two members present. Papers were read by Dr. W. M. Biggs, Osyka, and Dr. G. W. Robertson, Magnolia. Meetings are held the first Thursday night of each month.

Dr. Clyde Chisholm Ratcliff, son of Dr. M. D. Ratcliff, McComb, died in St. Louis, of pneumonia on November 8. He was completing a senior internship.

Dr. E. F. Howard, Vicksburg, furnishes the following:

"For the information of our good friend Cooper of Meridian, you might announce the recent 'second crop' harvest. With the arrival of Miss Mary Frances Dent, November 21, Dr. B. B. Martin of Vicksburg has qualified in the grandfather class. The doctor is doing as well as could be expected."

Dr. J. C. Branham, graduate of Columbia University, and formerly resident physician at the 5th Avenue and United States Public Health Service Hospitals at New York, and the Jackson Memorial Hospital at Miami, Florida, is now resi-

dent surgeon at the South Mississippi Charity Hospital.

U. S. VETERAN'S HOSPITAL

Dr. George M. Melvin, a native of Mississippi and a former clinical director of the U. S. Veteran's Hospital at Gulfport, has returned to Mississippi and is now medical officer in charge of that station.

Dr. Harry H. Botts has been transferred to the U. S. Veteran's Hospital at Gulfport, as clinical director.

Dr. E. McCann has been on annual leave in northern Mississippi visiting relatives and friends.

TRI-COUNTY MEDICAL SOCIETY

Whereas, it has pleased the Almighty Father in His Infinite Wisdom to remove from his earthly field of labor and usefulness our worthy and beloved fellow member, Doctor John H. Johnson, and,

Whereas, his walks in life as physician, citizen and in the service of the nation while in war as well as in peace are worthy of emulation by all, his going is a distinct loss to this Society of which he was a loyal charter member; there be it

Resolved by The Tri-County Medical Society the memory of his friendship and his high and that we sincerely regret his passing; that we cherish the memory of his friendship and his high and ethical ideals, and that we extend to the sorely bereaved family our deep and heartfelt sympathy in this sad dispensation.

Resolved, that a copy of these resolutions be spread upon the minutes of this Society, a copy be sent to the sorrowing family, and a copy be sent to the local press and to the New Orleans Medical and Surgical Journal.

Adopted December 10, 1929.
Tri-County Medical Society,

B. S. WALLER, M. D.,
President.

J. R. MARKETTE, M. D.,
Secty-Treas.

W. L. LITTLE, M. D.,

W. H. FRIZELL, M. D.,
Committee.

An active staff has been organized at Dr. Roland Cranford's Hospital. This institution has been renovated and enlarged and is now open.

Dr. H. G. McCormick of Laurel has returned from a hospital stay at Hot Springs and is able to be in his office again.

FROM MERIDIAN

Dr. I. W. Cooper, Meridian, furnishes the following:

Drs. W. G. Gill, Newton; Olin Parks, Louisville; E. S. Richardson, Louisville, and I. W. Cooper, Meridian, were the members of the East Mississippi Medical Society who attended the meeting of the Southern Medical Association at Miami. They all had a wonderful time.

The meeting of the East Mississippi Medical Society was held at Meridian December 19, at which time officers were elected. The physicians of Meridian tendered the visiting physicians a banquet.

Drs. J. E. McDill and J. O. Segura of Jackson, spent Thanksgiving Day in the best city of the State. They were here with their sons, who are members of the Jackson football team. Their visit here was greatly enjoyed by their friends.

We are all very glad to see Dr. Felix Underwood, of our State Health Board, was able to attend the meeting of the Southern Medical Association at Miami. Dr. Underwood has had a long siege with undulant fever, but we are very much gratified that he is just about well and able to take up some of his work again.

Mrs. T. D. Bourdeaux, wife of Dr. Bourdeaux, has been sick in the Meridian Sanitorium for about three weeks with typhoid fever. The last report from her bedside is that she is rapidly improving and will soon be well again.

The writer has just been out and inspected the Children's Hospital being built by Dr. F. G. Riley. This building is going to be the last word in hospitals for sick babies. Every convenience is there which will enable Dr. Riley to handle these cases in the most scientific way. From the present outlook he will be able to move in about February 1, 1930.

Herewith you will find enclosed a report of the Staff Meeting of Anderson Infirmary, held December 13. The following special case reports were presented:

Indications for Tonsillectomies—Dr. H. L. Arnold.

Syphilis—Dr. T. A. Strain.

Malaria—Dr. W. Jeff Anderson.

Cardiac Diseases—Dr. T. G. Cleveland.

Discussion of a Hospital Death—Dr. W. Jeff Anderson.

The following selected radiographic studies were presented by Dr. C. R. Stingily: Fractured Skull (two cases), Osteo-Arthritis, Early Pulmonary Tuberculosis, Late Pulmonary Tuberculosis.

The Tupelo Hospital Staff met on December 3, and a scientific program was presented.

13-COUNTIES MEDICAL SOCIETY

A meeting of the 13-Counties Northeast Mississippi Medical Society was held at Tupelo on December 10, and proved to be one of the most interesting and successful in some time. Included among the guests of the Society were Dr. Carrol W. Allen, New Orleans; Dr. O. S. McCowan, Memphis, and Dr. Seale Harris, Birmingham. Officers were elected and the meeting was closed with a banquet

Among those attending the recent meeting of the American College of Surgeons at Chicago were: Drs. M. H. McRae, Corinth; V. B. Philpot, Houston; W. H. Sutherland, Booneville, and W. C. Brewer, Columbus. Dr. Sutherland and Dr. Brewer also attended the meeting of the Interstate Post Graduate Medical Association at Detroit.

SOUTH MISSISSIPPI MEDICAL SOCIETY.

The meeting of the South Mississippi Medical Society was held at the Nurses' Home, South Mississippi Charity Hospital, Laurel, on December 12. After a business meeting at which officers for the coming year were elected, the following scientific program was carried out:

Treatment of Sepsis Following Labor.—Dr. H. L. McKinnon, Hattiesburg. Discussed by Drs. T. Ross and R. H. Cranford.

Treatment of Lobar Pneumonia.—Dr. H. P. Smith, New Augusta. Discussed by Drs. G. E. Eddy and Harelson.

Diagnosis of Appendicitis, Acute and Chronic.—Dr. C. C. Hightower, Hattiesburg. Discussed by Drs. W. N. Blount and R. H. Cranford.

The Disappearing Small Town and Country Doctor.—Dr. J. H. Newcomb, Richton.

General Discussion.

Immediately following the Scientific Program, dinner was served.

WINONA DISTRICT MEDICAL SOCIETY.

The Winona District Medical Society held its meeting in Grenada on November 19. Following a luncheon at the Grenada Clinic, the following program was presented:

Simplicity of Infant Feeding.—Dr. F. S. Hill, Grenada.

Tropical Sprue.—Dr. W. T. Swink, Memphis.

Indications for Roentgen-Ray and Radium in the Gynecologic Pelvis.—Dr. W. S. Lawrence, Memphis.

Tumors of the Breast.—Dr. J. A. Crisler, Jr., Memphis.

Each paper was followed by a round table discussion, participated in by all present.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY.

The Annual Meeting and Banquet of the Issaquena-Sharkey-Warren Counties Medical Society was held at the Y. M. C. A., Vicksburg, on December 10. Invocation was said by Rabbi Sol Kory, Vicksburg. During the banquet short talks were made by Dr. G. W. Gaines, Tallulah, Louisiana; Dr. D. J. Williams, Gulfport, Chairman of the Council of Mississippi State Medical Association; Dr. D. W. Jones, Jackson, Councilor for the Fifth District and Secretary of the Council for the Mississippi State Medical Association; and Dr. F. J. Underwood, Executive Officer of the State Board of Health.

The Scientific Program consisted of two outstanding addresses:

A Discussion of Some of the Newer Remedies and Methods of Treatment for Malaria.—Dr. C. C. Bass, New Orleans.

The Cause and Treatment of Arterial Hypertension.—Dr. J. S. McLester, Birmingham.

Officers for the coming year were elected as follows: President, Dr. L. J. Clark, Vicksburg; Vice-Presidents: From Issaquena County, Dr. W. H. Scadder, Myersville; from Sharkey County, Dr. H. S. Goodman, Cary; from Warren County, Dr. P. S. Herring, Vicksburg; Secretary-Treasurer, Leon S. Lippincott, Vicksburg. Member of the Board of Censors, Dr. W. C. Pool, Cary; Member of Committee on Medical Defense, Dr. E. F. Howard, Vicksburg. Delegates to the Mississippi State Medical Association: For Issaquena County, Dr. J. W. B. Benton, Valley Park; from Sharkey County, Dr. A. K. Barrier, Rolling Fork; from Warren County, Dr. E. F. Howard, Vicksburg.

VICKSBURG SANITARIUM.

The Regular Monthly Meeting of the Staff of the Vicksburg Sanitarium and Crawford Street Hospital was held December 9.

Special case reports presented:

Gumma of the Supraclavicular Nodes.—Dr. G. M. Street.

Carcinoma of the Rectum.—Dr. A. Street.

Cellulitis of the Right Inguinal Region Simulating Pott's Disease.—Dr. J. A. K. Birchett, Jr.

The Value of Glucose Solution Intravenously in General Peritonitis; Case Illustration.—Dr. H. H. Johnston.

Special Report: The Recent Meeting of the Southern Medical Association at Miami.—Dr. A. Street.

Election of Officers for 1930 resulted as follows: President, Dr. L. J. Clark; Vice-President, Dr. J. A. K. Birchett, Jr.; Secretary, Dr. Leon S. Lippincott.

BOOK REVIEWS

Human Helminthology: By Ernest Carroll Faust, Ph. D. Philadelphia, Lea & Febiger. 1929. pp. xxii+616.

This book is a valuable addition to the literature of both medical science and zoology. The sub-title, "A Manual for Clinicians, Sanitarians, and Medical Zoologists," gives only a partial idea of the scope of the work for the handling of biological principles is much more thoroughgoing than that which is found in most parasitological manuals, and the author has condensed into small compass a remarkable amount of material which is of interest not only to the medical profession but also to general biologists.

The subject-matter is divided into four parts. A short introductory section entitled "The Scope of Helminthology" deals with the general phenomena of parasitism, host-parasite relationships, history of helminthology, the laws of zoological nomenclature, the literature of helminthology, etc. Sections II and III, which occupy the major portion of the book, present a systematic survey of the flatworms and roundworms parasitic on Man, in which the synonymy, morphology, life processes, geographic distribution, pathogenicity, diagnosis, therapeutics, and prophylaxis of each species are discussed concisely. Section IV, which is devoted to diagnostic methods, deals not only with helminthic infestations in Man, but includes a valuable chapter on intermediate and reservoir hosts.

A clear and readable literary style and a large number of good illustrations are attractive features of the book. Many of the figures are original drawings by the author. There is a selected bibliography at the end of each chapter and a very complete index.

E. S. HATHAWAY, M. D.

Principles of Pathology for Practitioners and Students: By H. D'Arcy Powers, M. D., F. R. P. S. and William W. Hala, M. D. New York, D. Appleton & Co., 1929. Pp. 787

This treatise on pathology is divided into two distinct parts as though two volumes had been incorporated in one binding. Part I is entitled "General Pathology," and accounts for about 200 of the 790 pages. Its chapters are devoted to such subjects as "Inflammations," "Retregressions—Degenerations," "Causes of Diseases," etc. In them, general pathological considerations are discussed in a vague and rambling fashion which we do not feel can impress in a satisfactory manner, either the general practitioner, or the student for whom the authors state that the work is intended.

The discussion of tumors is based on the classification of Adami, which, while it has much to recommend it, appears impractical and intricate at this time when the tendency is towards simple, workable systems. We feel that this chapter especially would leave those for whom the book is intended with most confused impressions.

Part II is entitled "Systemic Pathology" and is far more valuable than Part I. A chapter is devoted to each of the physiological systems. Each organ is reviewed separately, and the various types of pathology which may involve it are discussed in detail. The descriptions of the gross appearance of the organs at autopsy are excellent. The authors fortunately made every effort to correlate pathological findings with clinical data, and in many cases complete case histories are given.

The illustrations, which number 298, are most disappointing. They consist for the most part of extremely crude mostly diagrammatic sketches. There are also included some poorly executed photo-micrographs, and photographs of gross specimens, which do not add to the value of the book, or the presentation of the matter.

We cannot see where this treatise makes any important contribution to the literature of pathology. There are other books on the subject which certainly better satisfy the requirements of the general practitioner and the student.

ADELAIDE MARY ZOELLER, M. D.

The Conquest of Cancer by Radium and Other Methods: By Daniel Thomas Quigley, M. D., F. A. C. S. Philadelphia, F. A. Davis Co. 1929. pp. 539.

This is a concise volume, well illustrated with 334 engravings. The introduction gives a history of cancer from the ancients known as the "Stinking Death" to the present day.

The first three chapters deal with the factors leading up to cancer, the fourth with classification of cancers and tumor growth.

The remainder of the book deals with clinical diagnosis, treatment and prognosis of the various cancers as they affect different organs and tissues.

This is the work of a master of his subject, can be read with interest by the layman and is invaluable to the medical profession.

It is not intended for the trained specialist because technical treatise of cancer has been simplified to meet the man who sees the cancer in its early and amenable stage. The F. A. Davis Co. should be complimented on the selection of the author and volume.

M. T. VAN STUDDIFORD, M. D.

American Illustrated Medical Dictionary: Edited by W. A. Newman Dorland, A. M. M. D., F. A. C. S. Fifteenth edition, revised and enlarged with collaboration of E. C. L. Miller, M. D. Philadelphia, W. B. Saunders Co. 1929. Pp. 1427.

The American Illustrated Medical Dictionary, edited by Dr. Newman Dorland, is too well known to need an introduction to the medical profession.

In this edition several thousand of the newest medical terms have been added, a careful revision has been given to wording of the definitions, the terms of anatomy, pathology, physiology and physical therapy receiving special attention.

A definite standard in terminology, spelling, hyphenization, etc., has been established in this volume. The entire volume has been re-edited by the editorial staff of the American Medical Association. Official nomenclatures of such bodies as the American Chemical Society, the Council on Pharmacy and Chemistry, the Association of Pathologists and Bacteriologists, and the American Radiological Association, have been followed.

The book amply fills the need of a good, modern, medical dictionary for the doctor's desk.

MARY LOUISE MARSHALL.

Diagnosis and Treatment of Deformities in Infancy and Early Childhood: By M. F. Forrester-Brown, M. S., M. D. (Lond.), with a foreword by Sir Robert Jones, London, Oxford University Press, 1929. Pp. 199.

This book will be found to be of interest to the general practitioner or to the student of orthopedic surgery.

Dr. Robert Jones in his foreword truly says that "it is especially intended for the school doctor, the general practitioner and those interested in welfare work."

It is too elementary for the general surgeon, but can be used to advantage by graduate nurses. The book is well illustrated.

EDWARD S. HATCH, M. D.

An Introduction to Pharmacology and Therapeutics: By J. A. Gunn, M. D., D. Sc (Edin.); M. A. (Oxon.) New York, Oxford University Press. 1929. Pp. 220.

The author says in his introduction that owing to the increasing demands on the medical curriculum, his yearly number of lectures in pharmacology and pharmacy has been limited to 50. A curtailed number of lectures such as this permits of not more than a general sketch of the subject.

It is his purpose in presenting this small handbook to provide the student with a short and comprehensive survey of the whole subject so that the lecturer could have greater freedom and more latitude to present the more advanced aspects of the subject. This little book then is supposed to be read by the student so that he may familiarize himself with the more important facts before attending the lecture. The lecturer then can discuss his subject with a group who are not completely ignorant of the important data concerning drugs. This seems like a most excellent suggestion. From a rather superficial survey of the volume, most of the essential features concerning drugs have been presented. The book may be recommended furthermore to those who wish to make a rapid review of the action of various galenicals, chemicals and biological preparations in the treatment of disease.

J. H. MUSSER, M. D.

Clinical Medicine For Nurses: By Paul H. Ringer, A. B., M. D. Philadelphia, F. A. Davis Company. 1929. Pp. 330.

It is always somewhat difficult to know just how much should be incorporated in lectures to nurses or in text books for their use. One can give a mere smattering of the subject of medicine which will be of little value. On the other hand, it is obviously impossible to detail the known facts concerning the various diseases of man. In the mind of the reviewer the best feature of this new and completely revised edition on clinical medicine for nurses is the excellent evaluation of the proper amount of information that should be given. Furthermore, the unusual diseases are omitted and only the common ones are described. This alone makes the book stand out, but added to this well selected material—the clear-cut description of disease, the well-balanced directions for the care of the sick, and the excellent literary style make it a book of undoubted merit.

J. H. MUSSER, M. D.

Hookworm Disease. Its Distribution, Biology, Epidemiology, Pathology, Diagnosis, Treatment and Control: By Asa C. Chandler, M. Sc., Ph. D. New York. The Macmillan Co. 1929. Pp. 492.

The tremendous amount of data on hookworm disease which has accumulated within the past two decades has made it almost imperative that some worker personally acquainted with the various phases of the subject should present it in comprehensive form for the medical public. This valuable service has now been performed by Doctor Chandler, whose experience with both the laboratory and field aspects of hookworm disease

are well recognized. In this instance intimate knowledge of the subject is combined with marked ability as a writer.

The book consists of ten main chapters, an appendix on laboratory technic, a valuable bibliography and a comprehensive index. An introductory chapter deals with the history of the disease. There follow in turn the geographic distribution of the disease, the adult hookworms, their life cycle and mode of infection, the epidemiology (environmental and human factors), pathology, diagnosis, treatment, prevention and control. Thirty-three well-chosen figures add value to the several phases of the subject.

The reviewer is impressed with the balance and unity of the work as well as the impartial way in which the many contributions to the subject are evaluated. The pleasing typography and bookmanship enhance its appearance. The volume is highly recommended for all workers in hookworm areas, as well as for others interested in the subject.

ERNEST CARROLL FAUST, Ph. D.

Recent Advances in Tropical Medicine: By Leonard Rogers, C. I. E., M. D., B. S. (Lond.) F. R. C. P., F. R. C. S., F. R. Second Edition. Philadelphia, Blakiston's Son & Co. 1929. Pp. 439.

The publication of a second edition of this volume is presumptive evidence of the success of the earlier edition. The compilation, which covers in twenty-five chapters all of the diseases usually considered in an unabridged manual of tropical medicine, is really a pocket handbook on the subject and actually presents in brief form all of the important contributions to the subject within the past quarter century. The several chapters include in the order of their presentation the following: kala azar, dermal leishmaniasis, malaria, blackwater fever, trypanosomiasis, relapsing fever, yellow fever, dengue, undulant fever, plague, cholera, bacillary dysentery, flagellae diarrhoea, amebiasis, and amebic hepatitis, sprue, "ankylostomiasis," schistosomiasis, filariasis, "other helminthic medicine," leprosy, yaws, granuloma inguinale, beriberi, and pellagra.

While it is rather remarkable that so much is comprehended in so small an octavo volume, and while there is no evident prejudice on the part of the author with respect to the conflicting views held regarding the etiology and other aspects of many of these diseases, there is a marked lack of polish and skill in the presentation of the material such as might have been expected in this type of digest. Furthermore, there is an unfortunate lack of balance in the subject matter. Individual case

histories are at times cited in *extenso*, while only brief mention is made of epochal studies embracing large series of cases. Likewise a lack of synthesis of the data adds to the difficulty of reading.

Slips in orthography are not uncommon. The term "preventative" appears several times, as does the word "helminthic." Omission of the German umlaut is consistent throughout the earlier chapters, but is at times indicated in the later pages. Expressions such as an investigator "of great experience" are repeated so frequently as to be monotonous.

The author is at his best when presenting amebic infections and their treatment, but on several other topics he gives the impression of incomplete digestion of the material. On the whole, when original sources are not available, the reviewer prefers to get his material from the excellent abstracts in the Tropical Diseases Bulletin.

ERNEST CARROLL FAUST, Ph. D.

The Female Sex Hormone: By Robert T. Frank, M. A., M. D., F. A. C.S. Springfield and Baltimore. Charles C. Thomas. 1929. Pp. 321.

The publication of this book is timely. In the last quarter of a century the new science of endocrinology has come into being, and, along with much good, it has spawned a host of evils. Of all its aspects none is in greater need of clarification than that of the female sex hormone, and no man is more fitted to elucidate it than the distinguished gynecologist and pathologist who has written this monograph.

The first section of the book has to do with the biology, pharmacology and chemistry of the female sex hormone, whose constitution, the author is careful to point out, is not yet clearly understood, though its origin and distribution, thanks in large part to his own painstaking investigations, may now be stated definitely. For the sake of completeness, this section contains also a comprehensive outline of the anatomy and physiology of the genital tract, and here, as elsewhere, one must admire the author's enviable grasp of these sciences in the lower organisms as well as in the human species. Part II comprises the clinical investigations based on the female sex hormone. In short, this book includes in concise and available and, it should be said, readable form, the essential matter of the very voluminous literature which has grown up around this subject, summarized by the scientist who, with his co-workers, has helped to make its history.

It is unnecessary, as it would be impossible, to outline in this brief compass the important points of the book, but certain comments I cannot refrain

from. In the first place, Dr. Frank, unlike many scientific writers, has no thesis to present. He merely states facts, but those facts are based on investigations and experiments so elaborate and so comprehensive that their verity cannot be questioned. In the second place, unlike much scientific writing, this book is remarkable for its clearness both of outline and of style, and its usefulness is enhanced by the very excellent summary and review of the subject which forms the concluding chapter. In the third place, the author is not only fair in his bestowal of credit upon other workers, but he is unusually generous, especially toward that group from whom, it would seem almost willfully, he has suffered from mis-quotation and mis-interpretation. And finally, to every physician, and particularly to those who are inclined to assign dysfunction of the endocrine glands all of the ills to which womankind, at least, is heir, I would commend two chapters. The first is that in which the author describes the proper examination of the gynecologic patient and stresses the fact that pathology of the endocrine system is a last diagnosis, to be accepted only after the painstaking elimination of general and local disease. The other is that in which he weighs impartially his own clinical results with endocrine therapy, and points out that, until a concentrated and stable preparation is at hand—which is not the case at present—treatment by the female sex hormone in the form of commercial preparations is unscientific and empiric. In these days of enthusiastic claims by pharmaceutical houses and apparently equally enthusiastic reports from the profession, this statement, in view of the source from which it emanates, is worthy of earnest consideration.

Dr. Frank has for many years done a work of exceeding worth in the study of the female sex hormone. I am not sure that he has not equalled it in value by the publication of this concise, lucid and impartial treatise.

C. JEFF MILLER, M. D.

Principles and Practice of Electrocardiography:
By Carl J. Wiggers, M. D. St. Louis, C. V.
Mosby Company, 1929. Pp. 226.

The author's position as an outstanding teacher of physiology, who has devoted a great deal of his time to cardiac studies, places him in an enviable position in this field. The book is the outgrowth of the lectures that he has given on the subject to medical students during the past decade. It is logically arranged, basically sound, and presented in such a way that the student or practitioner can grasp the fundamentals of the subject and really understand what he is working with. Any one interested enough to be working in the field should

have a clear conception of these principles, and he will find them more clearly detailed here.

There is slightly more emphasis and more space devoted to various types of instruments than the reviewer would consider necessary. The author has placed all of these imparitally before the reader, and he has not emphasized especially the advantages of one equipment over another, nor has he indicated his preference. The matter of the choice of the type of instruments he delegates to the individual.

The clinical side of electrocardiography might have received a bit more practical and extensive treatment, but after all this comes with a little experience after a good foundation has been established along the physiological lines of the author. The work is especially adapted for the medical man who wishes to acquaint himself thoroughly with the subject of electrocardiography and be able to practice the art scientifically. From this point of view the book has no superiors and few equals.

GEORGE HERRMANN, M. D.

Applied Electrocardiography: By Aaron E. Parsonnet, M. D., F. A. C. P., and Albert S. Hyman, A. B., M. D., F. A. C. P. New York, The Macmillan Company. 1929. Pp. 206. 114 figures.

In so far as this book makes an attempt to break away from the traditional methods of presentation of electrocardiography it is to be commended. After the usual brief discussion of essential anatomical and physiological facts, of various types of electrocardiographs and of technique, the authors take up those disturbances of the cardiac mechanism resulting from disease of the pacemaker, of the auricles of the conducting system, of the ventricles and of the coronary arteries. Because of the fact that extrasystoles may arise from almost any region of the heart, their mechanism and significance is, discussed separately. Short chapters follow on electrocardiographic changes in acute infectious diseases and in valvular disease. The final chapter, in tabular form, deals with the analysis of electrocardiographic tracings.

By their arrangement of the material, the authors are better able to place the emphasis where it should be placed in a book intended for the clinician, namely, upon the clinical significance of the electrocardiographic changes. At the same time, the details of electrocardiographic interpretation are intentionally slighted. The reader is apparently expected to leave this aspect of the subject to the technician or the specialist. Con-

sequently, the work is not one from which the novice should expect to learn electrocardiography. Nor will the seeker after a fundamental physiological foundation fare any better.

Perhaps the reviewer is somewhat too critical, for in his opinion few of the books on electrocardiography are entirely satisfactory. Thomas Lewis' books, particularly "The Mechanism and Graphic Representation of the Heart Beat," represent the highest standard of excellence. But they are difficult for the beginner. Of the less ambitious works, H. E. B. Pardee's "Clinical Aspects of the Electrocardiogram" is probably the best of those with which the reviewer is familiar. The volume here reviewed is certainly better than several others. Yet the reader will no doubt be startled to learn that the P-R interval "is remarkably constant, measuring about 0.16 seconds in nearly all mammals" (p. 6); that, in spite of the extensive experimental and analytical work of Garry, of Mines, and of Lewis and his co-workers, the circus movement explanation of auricular flutter is regarded as an assumption (p. 102); that in acquired dextrocardia reversal of the arm electrodes will cause no change in the electrocardiogram in lead I (p. 183); and that partial heart block results from disease of the auricular muscle (p. 124). Some of us may regret the omission from the bibliography of the really classical papers by F. N. Wilson and G. R. Hermann on bundle branch block.

With the interpretations of the illustrative electrocardiograms the reviewer is in substantial agreement, with exception of figures 88 and 89.

RICHARD ASHMAN, M. Sc.

Esophageal Obstruction Its Pathology, Diagnosis and Treatment: By A. Lawrence Abel, M. S. (Lond.), F. R. C. S. (Eng.) London Oxford University Press. 1929. Pp. 234.

This book is based on the Jacksonian prize essay of the Royal College of Surgeons of England for 1924, and includes a Hunterian lecture delivered at the Royal College of Surgeons in 1926.

All types of esophageal obstruction are considered and the author stresses the importance of the condition by the remark that many thousands of individuals die every year in England alone from various forms of obstructions of the esophagus.

In his endoscopic work Abel usually employs the Jackson, Mosher and Brunings instruments. He does not mention the Tucker retrograde esophageal bougie which is regarded with great favor in this country.

In cases of esophageal obstruction requiring gastrostomy the author does a modification of the Witzel operation.

The problem of removal of esophageal foreign bodies is gone into in some detail.

Cardiospasm is described and the various methods of treatment mentioned.

The pathology, diagnosis and treatment of pharyngo-esophageal diverticula is one of the most noteworthy sections of the book.

The section on cancer of the esophagus is comprehensive. Abel feels that radical surgery is justifiable, and says "The disease is so fatal, in the absence of any contra indication, such as metastases or extreme emaciation, radical removal should always be attempted." He recalls that when Billroth began operating on the stomach some fifty years ago many of his patients died; but today operations on the stomach are performed by all surgeons with extremely low mortality. The author shows laudable and courageous optimism when he says "With more adequate education and earlier investigation of cases and the application of the principles which I have enunciated, there would appear to be no reason why malignant disease of the gullet should not be treated so effectively that before long, instead of claiming virtually 100 per cent of its victims as it does at the present time, it will be the most favorable type of cancer with which the surgeon has to deal."

H. KEARNEY, M. D.

The Handbook on Diet: By Eugene E. Marcovici, M. D. Philadelphia, F. A. Davis Co. 1928. p. 323.

The Handbook on Diet is what its name implies. It was written, as may be observed in the preface, as a "go between" to the very scientific texts and reference books, and the incomplete reading matter given to the laity to assist intelligently in carrying out doctor's orders.

The first five chapters deal with types of food, its utilization and contamination.

Chapter six deals with the diet for the healthy, this chapter outlines the kind of diet used; for those persons termed overweight and underweight, for childhood and adolescence, in pregnancy, during confinement, and for the aged. As one would surmise, it is not complete in any one case; for example, it states "The growing youth does not need a special form of diet as the normal child's diet is well regulated by his appetite and natural selection of food substances in their proper proportion," which may or may not be true. The subject of supplying the proper foods from which

he can make this selection has been thought, by some, sufficiently important to be the subject of an entire book.

The chapters on diet in disease and special diets are more complete, as they treat of the diet in almost every disease, and in general follow the paths of the most accepted works. An Oriental remedy for pertusis in this chapter is rather interesting. Such remedies remind us of the old remedies that our grandmothers handed down to use from generation to generation. They are often very effective though simple. We observe that the author of this book is under the impression that pellagra is due to an excessive maize diet, and recommends a complete change of diet omitting all maize foods.

Of the recipes, in Chapter IX, those desserts for dialetics make it worth while, since the regular recipes contain far too much carbohydrates for the diabetics, and no one craves desserts quite as much as they. All of the recipes seem to be good.

The food values and chapter on mineral waters and bath resorts complete its contents.

All in all, it would not be considered a complete or an up-to-date scientific study, but perhaps it will accomplish the purpose for which it was written. Only time and use can prove that. It deals very lightly in the selection of foods, except in disease, and not at all in infant feeding; even in disease of children only the general plan for the adult is suggested.

One hears of such drastic changes in the theories of dietetics that it would be interesting to watch the experimental results; an example is the high protein diet for nephritis, recommended by a few men, who are afraid to bring down the volume of criticism that such a radical change would incur.

OLIVE WAKEFIELD.

Bodily Changes in Pain, Hunger, Fear and Rage:

By Walter B. Cannon, M. D., S. D., LL. D.
New York, Appleton & Company. 1929.
Second edition. Fig. 43, pp. 404.

This edition, dedicated to the thirty-four collaborators from various parts of the world who have aided Professor Cannon, embodies the new evidence gathered since 1915 as well as the revised

evidence set forth in the First Edition on the general thesis that the bodily changes which attend great excitement are directed towards efficiency in physical struggle. The chapters on the James-Lange theory of emotions and on an alternative view of emotion as a function of the optic thalamus are perhaps the most interesting to the general reader.

HENRY LAURENS, Ph. D.

PUBLICATIONS RECEIVED.

The Year Book Publishers, Chicago: The Practical Medicine Series, General Medicine, Series 1929.

W. B. Saunders Company, Philadelphia and London: The Volume of the Blood and Plasma and Disease, by Leonard G.

Princeton University Press, Princeton: Ameboid Movement, by Asa A. Schaeffer, Ph. D.

Harper & Brothers, New York and London: The Treatment of Diabetis Mellitus with Higher Carbohydrate Diets, by William David Sansum, M. S., M. D., F. A. C. P., Percival Allen Gray, Ph. D., M. D., and Ruth Bowden, B. S.

F. A. Davis Company, Philadelphia: Hemorrhoids, the Injection Treatment and Pruritus Ani, by Lawrence Goldbacher, M. D. Clinical Obstetrics, by Paul T. Harper, Ph. B., M. D., Sc. D., F. A. C. S.

Williams & Wilkins Company, Baltimore: Coronary Thrombosis: Its various Clinical Features, by Samuel A. Levine, Medicine Monographs, Volume XVI. Blood Grouping in Relation to Clinical and Legal Medicine, by Laurence H. Snyder, Sc. D.

Oxford University Press, London and New York: The Nervous Child, by Hector Charles Cameron, M. A., M. D.

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ACHLORHYDRIA, WITH SPECIAL REFERENCE TO GALL-BLADDER.*

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Only a few years ago the teaching in general medicine and also in the special field of gastroenterology with reference to the finding of no free hydrochloric acid, or with a subacidity, was that only one of the following diseases was to be considered as a causative factor:

First, pernicious anemia; second, cancer of the stomach; third, gastric neuroses.

This same idea was carried out in the medical literature of the time as well.

In more recent years, since the laboratory has become a part of all clinics, both large and small, and it has become the custom to do gastric analyses as a routine procedure in making all complete examinations, we have been forced to add, gradually, a number of other conditions to our list above. Among these conditions are gall-bladder disease, pellagra, sprue and spinal cord changes.

The first essential, naturally, is to establish the fact that achlorhydria exists. The only reliable proof of this fact is furnished by fractional gastric analysis. A single extraction of stomach contents is not considered sufficient evidence of proving an existing achlorhydria, or even a subacidity.

There is no symptom or chain of symptoms that prove or disprove the existence of achlorhydria. Roentgen-ray examinations or physical findings will not determine the activity of the gastric secreting mechanism; only fractional gastric analysis is conclusive.

Achlorhydria is a symptom only. Once it is definitely determined that this condition exists, a starting point towards the diagnosis of the underlying cause has been reached. We then may look for other evidence, either in the stomach itself or in other organs more or less remote, and consider the different conditions in which this symptom is commonly found. We will take up these conditions briefly.

PERNICIOUS ANEMIA

The first disease to consider is pernicious anemia, for until this condition is definitely ruled out by the history, the physical and other laboratory examinations, no other cause deserves consideration. The frequency of this association has long been a recognized factor, and gradually the conviction has been reached that this association is not only frequent, but is constant. It is often the first and only symptom and is sometimes found long before the underlying cause is in sufficient evidence for a clear cut diagnosis to be made. Most authorities agree that the diagnosis of pernicious anemia is very incomplete without this important finding.

CANCER OF THE STOMACH

In years gone by achlorhydria was an invaluable finding in the diagnosis of can-

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cer of the stomach. Since the development of the roentgen-ray examination of gastrointestinal conditions, however, this symptom has lost its prominence here. Some authorities say now that it is at best a late symptom, and after the presence of no free hydrochloric acid is found, that the condition is usually beyond surgical interference.

NEUROSES

There is a group of cases in which achlorhydria is found in which there is nothing else to explain the condition, after careful examination, except a disturbance of innervation to the secreting portion of the stomach. These cases have long been described as purely functional.

First in frequency comes the viscerophtosis with neurasthenia, commonly known as Glenard's disease. It is probably not the low position of the stomach that disturbs the acid secretion, but the faulty innervation to the secreting glands. This same deficiency leads to poor motor power, with atony and dilatation, which is very likely the cause of the digestive disturbances complained of in this group of cases, rather than the absence of the normal stomach acid.

There is another group of cases under this same heading worthy of mention, the neurasthenics without gastrophtosis. The history in these cases is one of long continued overwork, physical or mental, or both, or of prolonged emotional disturbances.

Achlorhydria is found in Glenard's disease with sufficient frequency to make it appear probable that it is a true consequence, but patients falling under this group of neuroses are not exempt from pernicious anemia, cancer of the stomach, or gall-bladder disease. So, the conclusion must not be prematurely drawn that the absence of free hydrochloric acid is fully explained by the gastrophtosis or by the accompanying neurasthenia.

PELLAGRA AND SPRUE.

These are two conditions that will be merely mentioned, for achlorhydria is not one of the outstanding symptoms here as in some of the other conditions under consideration.

In pellagra there are the other frequent symptoms of bowel disturbance, nervousness not accounted for in any other way, the mucus membrane changes, especially the tongue and mouth and the skin eruptions. It has been our experience in the last few years, in dealing with a number of cases of pellagra, that achlorhydria has been a constant finding.

In sprue, which is strictly considered as a tropical disease, but which is being seen with more frequency in the United States at present, the mucus membrane changes, the diarrhea, the gastralgia and, most important since the work of Ashford published in 1914, the finding of the Monila psilosis in all cases of sprue, are all factors of importance. Subacidity is rather a constant factor here, and achlorhydria is very frequently found.

SPINAL CORD CHANGES.

Since the publication of Hurst of London in 1922 of a record of ten cases of combined sclerosis of the cord, in which all cases showed a persistent achlorhydria, this condition has been added to those mentioned, in which there is marked interference with the acid-secreting glands of the stomach.

GALL-BLADDER DISEASES.

I have purposely omitted this condition until last, for it is this most important condition that I wish to discuss at some length.

That there is a definite relation between chronic gall-bladder disease and achlorhydria was first called to the attention of the medical world by Leva in 1893. Following his publications numerous other observations have been seen from time to time, most of which are found in the German literature. It is only in the last decade that sufficient evidence has been accumu-

lated to enable us to draw some definite conclusions. Reviewing these investigations in a paper published in the early part of 1925, Van Aldor states that, on the basis of observations made in different clinics by different men, it is definitely proven that hypochlorhydria of a marked degree or a complete achlorhydria occurs in about half the patients who have chronic cholecystitis. Blalock of John Hopkins Hospital reports the largest number of cases of anyone in this country with reference to this particular point. Between the years of 1899 and 1924 there were 735 patients operated on at Johns Hopkins for gall-bladder disease. In only 206 of these were gastric analyses made, but among these 23 per cent showed a complete achlorhydria. No mention was made of hypochlorhydria.

In Stanford Hospital during the five years from January, 1920, to January, 1925, there were 84 patients operated on for gall-bladder disease. Of this number there were 14 in whom the stomach contents were not examined. Of the remaining 70 cases, however, 37 showed either a complete absence of free hydrochloric or a marked reduction in acid secretion.

It has been a fact of great interest to me to check the records of our Clinic of the South Mississippi Infirmary and to note the results. All cases diagnosed as cholecystitis, acute or chronic, or cholelithiasis, over the last two year period, in which gastric analyses had been made, were listed and checked. There were 53 of these cases, and of this number, 22, or 41½ per cent, showed a complete achlorhydria, while 32 showed a definite reduction of the free hydrochloric to 10 per cent or below.

The question that naturally arises in one's mind is, why should there be any connection between achlorhydria and gall-bladder disease? Numerous theories have been advanced to explain this association.

Eichorn, who in 1892 coined the term achlorhydria, considered the phenomenon

to be due to "certain nervous disturbances," and cited the fact that he had demonstrated the presence of well preserved gastric glands in cases of achlorhydria. Since the innervation of the gall-bladder and stomach was so closely associated, the achlorhydria found in gall-bladder disease was a reflex due to this common innervation.

There is some objection to this theory, however, since gall-bladder disease and achlorhydria, or subacidity, are not inevitable associates, and that in some instances removal of the gall-bladder does not inhibit gastric secretion of free hydrochloric acid.

Then there is the hormone theory. The idea behind this belief is that there is an activating hormone produced in the bile tract, or in the duodenum, that is essential to the stimulation of secretions by the acid-forming cells of the stomach, and that in gall-bladder disease this essential substance is destroyed. This hormone theory is rather weak, also, since the hormone has never been demonstrated, and gall-bladder disease does not always produce achlorhydria; and, also, after the gall-bladder has been removed normal acid secretion may be re-established.

The most likely theory advanced to explain the connection of gall-bladder disease and achlorhydria is that of Van Aldor. His idea is that chronic gastritis is associated with a certain percentage of the cases of chronic cholecystitis; and that in these cases there will be found not only an achlorhydria but also a marked excess of gastric mucus, which is an important diagnostic feature.

In a recent publication of 1928, which is a most excellent treatise on diseases of the gall-bladder and bile ducts by Graham, Cole, Copher, and Moore, of Barnes Hospital, St. Louis, some very astounding figures are given which are backed up by statistics, not only of their observations but also from the experiences of others as well. Briefly stated, their conclusions were that between 20 per cent and 25 per cent of all

adults have gall-stones, and that from 40 per cent to 50 per cent of our adult population has disorders of their biliary systems which in probably the majority of instances are at times associated with more or less severe symptoms. We may say, then, that gall-bladder disease is one of the most common conditions that we are called on to diagnose and treat, either from a medical or surgical standpoint.

The idea in presenting this paper before this body was not to advance any new theories or to reveal any new original scientific investigations. In routine clinic and hospital work in the last few years in which a constant effort has been put forth to go to the bottom of each patient's individual problem as he or she presented it, the fact has been greatly impressed by constant repetition in case after case complaining of digestive disturbances, that there is more than an accidental association of achlorhydria and gall-bladder disease. Frequently the symptoms complained of are such that point to some stomach involvement. After gastric analysis and a gastro-intestinal study often the only abnormality found will be a subacidity or an acidity. Then the skiagraphs of the gall-bladder region are made after the dye is administered intravenously and more positive proof of gall-bladder disease is obtained.

On routine examination, when achlorhydria is found, we have the first manifestation of the destructive influence of some toxin at work in the body mechanism. This gives us a starting point for investigation, for we know that it is only a symptom of some deeper underlying cause, and in our search for this underlying cause gall-bladder disease, to my mind, should be one of the first conditions for consideration.

DISCUSSION.

Dr. G. W. F. Rembert (Jackson): It is very regrettable that nothing more is known about the secretion of the hydrochloric acid in the stomach. It certainly is not constant in health, nor is the absence constant in disease. It is generally

thought that it is necessarily absent in pernicious anemia. Newt Fowler reported seven cases two years ago of pernicious anemia in which achlorhydria was present. That was backed up by Alfred Stengel. The question is: When is true achlorhydria present? In the majority of cases when using crackers and water, no acid is shown, but 7 c.c.'s of 95 per cent alcohol and 50 c.c.s of water show the presence of acid, and again the false from the true achlorhydrias can be separated by the hypodermic administration of histamin, from a quarter to one milligram.

As to the frequent finding of low acid or absent acid in gall-bladder disease, that is very true. It also is found in conditions of chronic gastritis. The question arises whether the gall-bladder caused the gastritis or whether the gastritis caused the gall-bladder trouble, or whether one is responsible for the other. The absence of hydrochloric acid in gall-bladder disease is by no means constant, because an extraction of the stomach contents will at one time show no acid and at another time will show acid.

The removal of the gall-bladder has been followed at times by the return of acid in the stomach, and at other times there is no difference. I think we must feel that up to this time very little is known as to the presence or absence of hydrochloric acid in the stomach.

I remember hearing Christian make the statement once that the presence of hydrochloric acid in the stomach was a luxury that few could boast of, that it is very frequently absent and frequently without symptoms. Incidentally, the administration of hydrochloric acid at times is followed with very gratifying results, and at other times no therapeutic response whatever is seen.

Again the question on the part of the amount of it has been brought up by Tom Brown who said the mere presence of hydrochloric acid in the stomach is enough to bring about the necessary activation and that the quantity does not influence. Sampson in California insists on large doses, and Silverman has shown that digestive action does not take place in the stomach unless the hydrochloric acid is present in certain concentration.

The doctor has presented a beautiful compilation of thought and has brought before you some questions to decide regarding the influence of gall-bladder and acid secretion which will some day be better understood.

Dr. J. P. Culpepper, Jr. (closing): I have nothing else to add. This is a most interesting subject. It is a subject, as Dr. Rembert said, that we know very little about at this time. There is a wide field for investigation and for research along this line, and I am sure it is just a question of a few years until we will have a better understanding about this condition.

CONGENITAL HYPERTROPHIC
PYLORIC STENOSIS.*

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In 1902 Cautley and Dent stated that the earliest record of congenital pyloric stenosis was that of a case report dated 1841. William Osler took exception to this statement, and in 1903, set forth the claims of Beardsley of this country. But because of the age of Beardsley's patient, which was five years old, his diagnosis was presumptive rather than positive. It has been proven beyond any doubt that George Armstrong of London in 1871 was the first to give a description of this malady. He antedates Beardsley by seventeen years. Gross's surgery in 1872 has no reference to any such ailment.

Pyloric stenosis occurs much more frequently in males than females. Most of the cases are found in breast fed children. Therefore, artificial feeding has nothing to do with the condition. Fully one-third of the cases are in the first children. Apparently the children are otherwise healthy. According to some authorities some form of stenosis occurs in 2 per cent of all infants. Complete obstruction is found in a fraction of 1 per cent. The etiology is unknown.

The pathology of pyloric stenosis in early infancy is also somewhat obscure. At present there are two quite different views. Some believe the primary and essential condition is one of spasm, with secondary hypertrophy. The other view, and the one most likely, is primary hypertrophy, with secondary spasm. This has been demonstrated in a foetus. The tumor neither looks, cuts nor acts like an hypertrophy or spasm of muscle. The margins of the incision through it have no tendency to separate. But whatever it is, it varies in degree, giving quite different clinical courses.

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Symptoms rarely begin during the first week. Between the second and fourth week, rarely later than the sixth, the first symptoms to make its appearance is vomiting. At first the child vomits or spits up two or three times a day. The character of the vomiting gradually increases in severity, depending upon the amount of obstruction. The vomiting becomes more projectile or gusher in type each day. In a simple pyloric spasm there is an absence of vomiting at times but in pyloric stenosis the vomiting is persistent. In a partial stenosis a certain amount of milk will pass into the small intestine. The loss of weight and dehydration will not be as rapid as there will be milk in the stools. In a complete stenosis there will be rapid dehydration, starvation stool, constipation, lessened amount of urine. In a natural effort to empty the stomach there results hypertrophy and dilation of the stomach. The peristaltic waves become increased. Due to loss of weight and dehydration, the abdominal wall is very thin and the waves can be seen crossing the upper abdomen from left to right. Their size and frequency are increased after the taking of food. They can be seen from a distance after feedings. At times it is possible to palpate the tumor of the pylorus. It is much easier to feel the tumor when the stomach is empty. When found it is freely movable. Fever is absent in all cases, unless the dehydration is so severe as to cause an inanition fever. Then it may reach as high as 105 degrees. The prolonged retention of food in the stomach is one of the characteristics of pyloric stenosis. After feedings the upper abdomen is very full, whereas, the lower abdomen is very thin and empty. In all cases the severity of all symptoms depend entirely upon the amount of obstruction.

If the condition is kept in mind, the diagnosis is usually easy. Projectile vomiting, a palpable pyloric tumor and visible peristaltic waves, a combination in no other condition, make the diagnosis not a matter of opinion but an absolute certainty. Con-

genital occlusions of the duodenum give a similar picture, but this condition is very rare. Here the vomiting occurs from birth and the vomitus is generally bile stained. Usually the only difficulty is to distinguish between so-called gastric indigestion and the milder cases of stenosis. Gastric disturbances are not very common in breast-fed babies and the vomiting is usually in small quantities. Gastric motility is impaired while in stenosis it is markedly increased. One must keep in mind that projectile vomiting and chronic constipation are found in tumors of the brain; also, that vomiting and scanty urine are found in renal diseases. It is rarely ever necessary to use the roentgen-ray to make a diagnosis.

Pyloric stenosis must be considered seriously. It often ends fatally, unless properly treated. By the older methods of treatment fully 50 per cent died. Operative methods offers a more hopeful prognosis. During the last fifteen years there has been a gradual reduction in mortality. Bolling in the *Journal of the American Medical Association* in 1925 reports a mortality of 8½ per cent in a selected group. The general mortality is about 17 per cent. With a fairly early diagnosis and a resort to surgical treatment, the mortality should not be over 8 or 10 per cent. The more weight the child has lost the worse the prognosis.

The preoperative preparation consists of combating dehydration and loss of heat. Normal saline should be administered into the peritoneal cavity. Glucose and saline should be given continuously by rectum if retained. The infant should be well wrapped in a blanket. The operating room and table must be warm. Hot water bottles placed around the child's body prevent chilling.

Except in the very mild cases, the treatment is purely a surgical procedure. There have been several operations devised to relieve the obstruction, but the one of choice is the Rammstedt. It consists of making a

small right rectus incision over the pylorus and delivering it through the incision. A longitudinal incision in the bloodless area, is made through the serosa and muscularis. The cut surfaces are retracted, allowing the mucosa to protrude into the wound. It is much safer to use blunt dissection, after cutting almost through the muscular coat. After stopping the bleeding, the visera is dropped back into the peritoneal cavity. In closing the abdomen great care should be taken to suture layer by layer and to use three or four through and through silk worm retention sutures. These little fellows strain a great deal and unless well sutured, post operative evisceration will occur. The Rammstedt operation is the quickest performed. In very skilled hands it can be done in five or ten minutes. Most any operator can finish in twenty minutes. If carefully done, excellent results will follow.

The operative risks are operative shock, hemorrhage, perforation of the mucosa of the stomach or duodenum, and inadequate freeing of the musoca. Every precaution must be taken to eliminate shock by speed in operating, suitable anesthesia, warmth before, during and after operation and by subcutaneous and rectal salines before operation and after returning to the bedroom. Hemorrhage can be prevented by incising in the bloodless area and ligating all vessels cut. Blunt dissection will lessen the hazard of perforating the mucosa. After the wound is as deep as thought necessary the two cut surfaces should be pulled further apart. This tissue does not retract as muscle usually does. If any remaining fibres are left uncut, they will be easily seen and can be broken with a hemostat. If these precautions are heeded there should be no inadequate freeing of the mucosa.

Feeding should be begun soon after the operation. Usually in one or two hours the child can take water or diluted breast milk. Small amounts should be given every half hour. In forty-eight hours the amount is gradually increased. In four or five days

the baby is put on the breast. Usually these babies vomit no more and gradually gain in weight.

The treatment of pyloric stenosis should be surgical in all cases, except those with the milder type of obstruction. Prolonged medical treatment before the baby is sent to a hospital is the most common cause of mortality. The operation of choice is pyloroplasty, because of its low mortality and the base on which it is preformed. This operation is one of the most gratifying in surgery.

DISCUSSION.

Dr. S. W. Johnston (Vicksburg): I want first to commend Dr. Harvey for the brevity of his paper and for the fact that he carried everything in it. The paper could have been much longer and still have had very little more meat in it.

The point of interest in pyloric stenosis is the fact that about sixty per cent occurs in the first-born. Still reports 248 cases, thirty-seven of them only being female, 148 of the 248 cases being in the first-born. A tumor in a child's abdomen, if a boy, in the first-born points very clearly to pyloric stenosis. I have seen but two cases. The first was a child that I delivered. When I discharged the mother and the baby about the end of the seventh day, the mother and child seemed perfectly well. They brought the child back at the end of three weeks extremely emaciated. The little fellow didn't weigh more than three or four pounds. In giving it ether it died before we could open the abdomen.

The second child I saw when twelve days old. We did a Rammstedt operation and it recovered. I think these children, when they do recover, seem to be healthy and just as normal as any child. The cases reported that were operated on in years gone by have never had any recurrence of symptoms.

During the eight years that I was superintendent of the state charity hospital, we had a predominance of negro babies. The percentage of negroes in the hospital ran about eighty-five to ninety per cent. I never saw a case of pyloric stenosis in a negro, and I wonder if there is any

reason that a child of negro parentage should not be subject to pyloric stenosis.

The mortality runs a great deal higher in those who are treated medicinally. Startling reports out of a series of thirty-seven cases treated medicinally a mortality of eighty-four per cent. Out of fifty cases treated surgically he reports a mortality of only forty-eight per cent.

There have been cases reported of twin boys (Dawes reports a case), the first-born of the twins having pyloric stenosis.

Again I want to commend the doctor for his paper and for the brevity of it.

Dr. E. C. Parker (Gulfport): Gentlemen, in this paper there are two things which I should like to emphasize. One is to always do the operation under local anesthesia. It is so much easier and there is so much less danger. For years, Dr. Bevan of Chicago has given his patients a little sugar and whisky and then, under a local anesthesia, he has been able to do the operation in a few minutes with practically no shock to the patient.

Another point I wish to emphasize as brought out by the doctor is doing a blunt dissection. Remember, the tissues are very tender and with a sharp knife it would be easy to get into the mucous membrane and cause a fissure. Always use the handle of the knife or pair of hemostats for a blunt dissection.

If taken in time, all the patients practically should recover. In the borderline cases the roentgen-ray should be used. If you take a roentgenogram and find a typical dumb-bell you certainly have a typical pyloric stenosis. A typical pyloric stenosis resembles a dumb-bell with just a little handle across the middle.

I think we should use the roentgen-ray more often on these cases in which we are not positive, those cases suggesting symptoms of pyloric stenosis, but still not positive enough to rush in for operation.

Dr. Joe E. Green (Richton): As you all know, I am not a surgeon, but I do think there is one point in the doctor's paper. Not knowing too much about surgery, I think I can agree with Sid Johnston, by what little I know about it, that Dr. Harvey covered the field in a short time.

There is only one thing that he did not give and that is the symptoms which might lead the general practitioner to discover this condition.

Most of us always instruct the mothers to feed the baby and to feed him plenty. If he gets too much in his stomach, he has a way of getting rid of it, and he will do it without any effort. He has a pop-off valve and it will pop off if he overloads. But you had better be on your guard. There is another condition that does occur—early sometimes—almost just as soon as the baby begins to get milk from the mother's breast. Sometimes the parents are prone to prolonging the time before calling in the family physician. They are proud of the fact that the baby is so strong, that he can vomit way out yonder. That is the only point I want to make—projectile vomiting.

I do give medication, and probably everybody else does, but do not prolong medication if you do not get results. If we continue to wait until the baby is dehydrated and its vitality low, the surgeon will be handicapped and the undertaker will win the baby.

Dr. T. B. Sellers (New Orleans): I want to congratulate Dr. Harvey on his excellent paper. There are a couple of points I should like to mention. One is the diagnosis.

Recently one of the leading pediatricians brought a patient into the hospital with a diagnosis of pyloric stenosis and I had really planned to operate that afternoon. But this pediatrician said, "Suppose we take a roentgenogram." We did, and a fair amount of the bismuth went through. Still there was some obstruction. We decided to try a large dose of atropin. We did and the child recovered and is getting along beautifully today.

I feel that we should use all the means at hand to confirm a diagnosis in the early cases. Of course, if a child is in a desperate condition—emaciated as we so often see them—you haven't time to go through many therapeutic tests. Atropin in this case certainly saved our necks from going into what I believe was a pyloric spasm rather than a pyloric stenosis.

There is one other point and that is to remember that this is a small child, an infant. Just as one doctor said, we should use all precautions to prevent shock, and most important is to use

small instruments, small needles, because all those things will help to reduce shock, the very thing those little fellows cannot stand.

In my first case of pyloric stenosis, about the fifth day I went to dress the wound and found a loop of the bowel protruding from the wound.

I am glad the doctor mentioned the question of through and through silkworm retention sutures. I think that is certainly worth while to keep in mind, because you will have evisceration if you are not careful.

Dr. W. W. Crawford (Hattiesburg): I will not prolong this discussion. I should like to answer the question raised by Dr. Johnston with reference to the appearance of this condition among the colored. I would say that about two years ago I had a case in a young negro child about four months of age. The child was badly dehydrated, and looked to me to be a typical case of pyloric stenosis. We had to give a hypodermoclysis and use other means to try to get the baby up to a level where we could do the proper sort of procedure.

When we opened the abdomen, instead of finding a pyloric stenosis we had a condition of a congenital anomaly in which the transverse colon had insinuated itself up behind the duodenum and had come out above the pylorus, making intermittent pressure in that point. At times the colon would become greatly distended with gas and at such times (which was most of the time, in fact, with this child) was the cause of the dehydration that existed. It had nourished just a little. It had lived for months. The distention of the colon was the obstructive factor there rather than any congenital defect in the pylorus itself.

The case was most unusual and I have found nothing just like it in the literature. I mention it here because of that fact.

Dr. A. B. Harvey (closing): I want to thank the doctors for their general discussion. Before proper treatment can be instituted correct diagnosis must be made. A correct diagnosis will rarely ever be made unless we bear in mind all the possibilities, and that is why I brought this paper—lest we forget.

ABDOMINAL SECTION AND ITS CONSEQUENCES.*

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This paper is more particularly addressed to general practitioners of surgery and medicine. The establishment of general hospitals over the country on the lines of first defense where acute pathological surgical diseases can be treated promptly, and therefore efficiently before complications have been established and serious consequences follow, is the order of the present day. The entry of the abdomen in acute abdominal conditions has become a routine of good surgery rather than purgatives, diet and wait. With proper asepsis and hospital facilities modern technic has made the procedure of entering the abdominal cavity so safe that I fear that we may have a tendency to enter this surgical sanctum sanctorum occasionally without due and proper consideration of its significance.

As time progresses and science is more thoroughly elaborated we cannot afford to slacken in our purpose to have our surgeons more thoroughly equipped and fitted for their work. For many years past, there has been a great inclination to specialize in practice, until we have practically left the general field open and wanting; but I believe that this tendency will reverse itself, sooner or later, and we will have a greater number of men doing a general practice than we have had in the immediate past.

It is very fine when a patient is fortunate enough to have plenty of money to have his physical defects thoroughly studied by various specialists and finally determine what is necessary to do and then to be able to select the specialist, who can most thoroughly do this special line of work under

which this disease falls and submit himself for that particular operation; but when it so happens that a client is stricken down suddenly with what we term an "acute abdomen," the general man, with a condition like acute appendicitis, rupture of tube in tubal pregnancy, acute obstruction of bowel, etc., has no time left often even to make a definite diagnosis at all. So it becomes a paramount issue for this first line man to operate or allow his patient rapidly to approach a dilemma in which even the most special man may not succeed. It, therefore, becomes necessary that general men in small towns do a great deal of surgical intervention. With this in mind it becomes paramount that we should be conversant with the dangers always contingent upon entering any abdomen; for the cure or relief of the patient.

It should be well remembered that there are two main purposes to attain on entering an abdomen: First, the physical or anatomical; second, the physiological results. It is horrifying enough on the part of patients to be subjected to surgical procedure with all of its horrors and dreads but it is very chagrining to surgeons to see the bad results of poor operative technic consequent upon the operation upon the abdomen such as large scars, areas of anesthesia, hernia, etc.

The smoothness, symmetry and beauty in general makeup and contour of the human body, when in the perfectly natural and well developed state, is attractive even to the eye. The alertness, physiologic response and the multiplicity and complexity of the nervous system and the musculature of the human body is also very attractive to study and to see working in phenomenal way. The retention of this contour and this physiologic acumen is therefore to be kept very vividly in mind, when doing any operative procedure that requires insult to these tissues and their physiological activities. No tissue should be cut—skin, fascia, muscle, nerve or even bone without the utmost purpose of restoring that tissue in

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apposition, approximation and restoration to its vital powers.

In studying the abdomen, it is a very intricate fleshy cage for the gross protection and retention of a very vital group of organs, the principal of which is the gastrointestinal apparatus. Within this gastrointestinal apparatus food by physiochemical processes is converted from various elementary products to the most wonderful biological makeup of all nature's production — human flesh, protoplasm, living physiologic substance. Equally wonderful in this structural mechanism is the abdominal walls. At each side and to the mid-line in front we have the fleshy cage intricately woven by no two tissues running prallel except where continuity of nerves, blood vessels and lymphatics extend to support the lower extremity. The external oblique, internal oblique, transversalis and rectus abdominis form the principal muscles of this fleshy cage, this fleshy layer being covered by fascia and skin. For the sake of study the surface of the abdomen is divided into three zones, upper, middle, lower; and nine regions, viz., right and left hypochondriac, right and left lumbar, right and left iliac, epigastric, umbilical and hypogastric, the details of which are too academic to spend our further time. For operative procedure the lower zone in which most of the abdominal surgery is done is a very safe field for the surgeon to work; the middle and upper zone are tedious and less safe in proportion as we approach the diaphragm.

The principal operations for which the abdomen is opened are appendicitis, cholecystitis, obstruction of bowel, operations on the stomach and operations on the female pelvis. There is not much latitude for sites of choice because incisions must be made so that we can approach the pathology in view, but the abdomen being made up entirely of soft tissue there is some discretion on entering sites where there will be least destruction to the tissues that are to be invaded; for example, avoiding large ar-

teries and important nerves by choosing sites of midline, para-medium, gridiron or intermuscular, etc. Another thing to bear in mind on entering an abdomen is what necessity we will find on the operation of our pathology, whether drainage is to be installed or whether each tissue is to be apposed, approximated and closed in unique and perfect mechanical condition. If drainage is to be instituted we are certainly to expect the interposition of artificial scar tissue that is both inimical to physiological results and productive of weakened and less vital strength than the original native type.

If we would undertake to imitate nature on making any ingress to, or egress from, the abdomen we might note well the mechanical structure of the inguinal canal. The internal ring entering one layer of tissue then through separated planes of tissue structure more or less parallel to those structures, then making exit at another site through another plane of tissue, producing the greatest strength for the tension of abdominal contents which have a constant tendency to protrude through any weak spot in the abdomen. In males, which sex must give patency to this canal, we have a large percentage of hernias. It is right important, therefore, to note in passing the defective mechanism of nature or weakness produced by this exit from the abdomen. How much more difficult must it be for us to make an artificial opening and leave results so that the physiological equation may be perfectly well satisfied.

This method of entering, pulling aside other layers of tissue and finally entering at a site some distance from the original entry, thereby producing an overlapping of the various planes of anatomical structure is very ideal provided we know before hand that we have a clean procedure in which all tissues may be brought together, sutured in layer, making the strongest possible result. But if we have an anticipated long continuous drainage, with drainage tubes installed, this method is calculated not only to defeat our purpose of drainage but to

produce a great deal of destruction to the various layers of tissue. While we wish the drainage to continue it has a constant tendency to obstruct us, and when the drainage is completed we have to expect an immense amount of plastic tissue which has low vitality and an inclination to give us hernia. This same objection prevails with the gridiron or McBurney incision. We should anticipate with apprehension the result of any opening in the abdomen where there is long continued drainage for there is continued strain on the abdominal wall from abdominal contents, from gravity and from gaseous distention within the gastrointestinal tract. The entrance through the midline is very ideal in that the hemorrhage is very insignificant, the number of layers fewer, destruction to nerves reduced to a minimum and depth of incision very insignificant. It is also ideal in its approach to the female pelvis or abdominal conditions where exploration is a matter of necessity in that we may, with extension of the wound, examine abdominal organs through a midline incision. Inasmuch as each side will provide its own nerves for the tissues of a midline incision, there is not the paresis of structures following the incision.

Veins in the abdominal wall correspond chiefly with the arteries; from the thoracic and abdominal aortae, both iliac and internal mammary. Principal bleeding that is encountered is in or near the rectus muscle; the deep epigastric at the outer border and lower end being very deep and largely posterior to muscular structures should be cautiously safe guarded on account of its retraction and recession when cut, giving unnecessary loss before instant and proper control can be made. Incisions in the midline are almost bloodless.

The anterior abdominal wall is rather richly supplied with nerves coming from the spinal cord, from the sixth intercostal to the first lumbar inclusive, traversing the abdominal wall from the side anteriorly and downward, making an oblique sweep over the anterior abdominal wall, penetrating

the recti transversely, meeting their fellows of the opposite side. Hence there is not much danger to destruction of nervous tissue on entering between the oblique and transversalis muscles, layer by layer, observing carefully each thread and pulling to one side in order not to destroy function. Not so within the rectus muscle, fibres of nerves being transverse to that of muscular striae.

Sites of incision are the midline, above and below the umbilicus, to either side on either edge or through the rectus muscle, and the McBurney and gridiron incisions. In the midline the aponeurosis heals very readily making a strong repair scar, sometimes even stronger than the original, minimizing the probability of hernia and when the skin is properly approximated leaves no anesthesia or hypersensitiveness. The suprapubic midline incision gives the most universal access to any part of the abdomen below the umbilicus, I think being the choice site of incision both in drainage cases and in clean cases of the female sex. The right rectus or paramedian incision slightly outward from the inner aspect of the rectal sheath, pulling the right rectus outward, entering posteriorly slightly outward to this, gives a most beautiful theoretical and practical entry for all clean cases for pathologies in the iliac or lumbar region. When drainage must be installed with this overlapping of planes the tendency is both to defeat drainage and to destroy the various overlapping planes of tissue.

The gridiron incision, half way between umbilicus and iliac spine, is very ideal where there is a clean procedure to perform and very little manipulation to be done. In the upper zone the subcostal, on either side along the arch, and the paramedian slightly outward to the inner edge of the rectus muscle gives us entry for the gall-bladder and liver. The median line gives very good, probably the best, access to the stomach. In reviewing the cases during the course of my surgical experience of abdominal sec-

tions I have seen very few hernias which I consider the most serious consequences of abdominal surgery, and when we have completed the technic of entering the abdomen in clean cases so that all tissue will be brought back together and sutured to like tissues with due approximation, coaptation and matching of all parts under aseptic precautions, we can hope for all poor results to be minimized. When drainage has to be established with long continued holding of the tissues apart by some foreign substance as drainage material, and with pus, which is inimical to repair, pouring over structures which are finally to be repaired and brought back together, it is poor hope that we will be able to eliminate all bad results. As to minimizing the after effects of muscular paralysis in abdominal sections we should note well on entering, at other than midline, fibres of nerve tissue, pulling them to one side, avoiding the outer aspect of the rectus where these fibres cross so freely and contrary to the course of the incision. Abdominal surgery is becoming a very popular field but there must not be any letting up of effort to perfect and secure better results.

We may not hope that just cutting and tying in abdominal surgery is going to give us the happy results that we would take a pride in showing in two or three years after the operations have been done. Abdominal surgery is a true science and a true art and he who would operate well must know the anatomy of the abdomen and apply the mechanics thereof.

DISCUSSION.

Dr. John Darrington (Yazoo City): Dr. Arrington's paper seems to be more of a general discussion of abdominal surgery. I do not think there are any special points that require emphasis.

Doctors of this generation have seen abdominal surgery come into its own. Our forefathers regarded ailments within the abdomen as beyond the hope of treatment. The knowledge of asepsis and anesthesia gave birth to abdominal operations. I just wonder how many thousands and thousands of people have died in generations past for the lack of that knowledge. It is a

wonderful thing when we consider how urgent matters are so greatly delayed before we discover them. Think of the millions of children who have died from diphtheria, and just in this generation have we found a preventive and also a specific.

We wonder concerning the cause of delay. We wonder now concerning the cause of delay in the knowledge of abdominal ailments, but we have learned a great deal in the last few years about the pathology of abdominal ailments and what to do for them.

Of course, our operation on an abdomen is an assault on perfectly sound tissue in order to give us an opportunity to relieve the diseased tissue within. We should be extremely careful to do as little damage in making this operation as possible.

I had a maiden lady not long ago who needed an abdominal operation. She said, "Will there be much scar?"

I said, "No. Not a great deal."

She left and about an hour or two later she sent for me, saying, "Come here right away. I want to talk to you. Are you going to open my abdomen?"

I said, "Yes."

She said, "Will there be an ugly scar on my abdomen?"

I said, "No, no. There may be a little line, but it will not be bad."

The next morning when we were ready to operate she provoked me considerably by asking concerning the scar again. I said, "What is the matter? Are you going to put this abdomen on exhibition? Is that your reason for being so careful of its appearance?"

She didn't ask me anything more about the scar on the abdomen.

The type of incision you make, of course, depends on the ailment within and what is necessary. Dr. Arrington speaks of the McBurney incision as being an ideal incision for an appendix that is not bound down with adhesions or on the verge of rupture. You have a limited amount of space in using a McBurney incision, and it very often happens that you need a great deal more space after you get in there. For that class of patients you have a better abdominal wall and a stronger abdominal wall from a McBurney operation than from any other method of opening the abdomen. I presume it is being used in more cases than any other type of in-

cision, the right rectus incision being ideal where it is likely you will need a larger incision.

I know of no special points brought out by the doctor, except that I think we should be extremely careful not to cut open abdomens which do not need to be cut open. The greatest asset in a doctor is honesty, along with conscientious work. People have faith in you, and the worst thing an individual can do is to violate the faith and friendship of another individual. There is a tremendous responsibility upon doctors, and any man who approaches an abdominal operation with any feeling other than that he would do the operation if it were a member of his own family or himself is not keeping faith. If he will set that standard and stick to it, I believe he will meet the ideal attitude of the surgeon toward the patient.

Dr. O. N. Arrington (closing): I have nothing to add, except to emphasize the points that I intended to make in reading this paper. We are operating on a perfectly innocent tissue and we want to leave no bad results on this innocent tissue. The point of entry perhaps for the general man to secure this sort of entry and exit is the paramedian incision just to the inner edge of the rectus muscle.

If we have a clean procedure I usually use the width of my two fingers from the median line on entry, if it is a medium size patient; if it is a large patient, I increase it. I usually strike just to the inner edge of the rectus muscle, pulling the rectus aside, noticing carefully for nerve structure and not cutting nerve tissue; entering slightly the internal oblique, making thereof three layers to produce the greatest possibility of shrinkage in the remote result.

In all female operations by the general man who is not especially a surgeon, perhaps the median line below the umbilicus is the best of all. It seems that this tissue will grow back together and be stronger even than it was originally.

I want to emphasize this feature in securing the minimum amount of scar tissue in the skin. We have all noticed in apparently minor operations, where the abdomen had to be incised, some skin tissue grows back together with practically no scar, while through some other apparently innocent procedure it will grow back together and leave an intense scar. I think this can be anticipated, to some degree, by doing what Dr. Matas has long taught. When we go to remove or when we have removed our approximation sutures, or even after the operation it is sometimes done immediately, we should

take strips of adhesive and pull the skin very closely together. This is especially important when we finish the operation and take out the sutures in order to hold the skin very closely together so there will be a minimum of scar tissue of the skin. This is particularly important also when the wound is healed by granulation when there is going to be a large scar tissue area. That will help the general men some in entering and getting out of the abdomen with the least amount of harm to the innocent tissue.

PERIMETRY.*

JAMES D. PERDUE, M. D.,

MOBILE, ALA.

In discussing this subject today I realize that all of you are familiar with it, and also that it is a dry subject, but I believe it is one that is neglected by most ophthalmologists in the smaller cities. I am trying to stress this important aid in diagnosis and prognosis.

What do we mean by perimetry? It is the study of central and indirect vision, or that part of the fields from which the eye at rest can receive impressions. Our limited time and small fees in this section make it necessary to do our examinations very rapidly. Some oculists use nurses or technicians for this work, but unless one has a practice large enough to give these helpers much experience, their findings will not be accurate.

The necessary equipment is inexpensive and simple. I am naming only the minimum requirements. They are as follows: A hand size perimeter for bedside and hospital use, a stationary perimeter, a tangent screen and some form of stereoscopic instrument for central defects. The Lloyd slate is one of the best instruments for this use, but it is expensive. I use only the ordinary stereoscope with Bissell's and Haitz's charts. This is very cheap, and with these three simple methods one can get a good working idea of the visual fields.

*Read before the Section on Eye, Ear, Nose and Throat, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

Some factors that will influence the shape and size of the fields are refractive errors, such as high myopia, which tends to diminish, and hypermetropia, which tends to increase due to depth; the bony conformation of the orbital cavity, intelligence of the patient, influence of drugs, fatigue and illumination. If illumination is poor, the findings are very unsatisfactory and unreliable.

The type of stimulus is of great importance and should always be noted on the record, giving the size especially.

Care should be taken to acquaint our patient with the fixation point, otherwise his attention will be attracted to the stimulus and then back to the fixing point. It is a good idea to repeat the taking of the fields in twenty-four hours and then contrast our records. If we are in doubt about our findings, and are getting too many pathological fields, it is well to run some controls, and by so doing check up our technic. We may find that we have overlooked some of the factors that influence the size and character of our fields.

I shall not make an effort to describe the types of fields that we might expect in the various diseases and conditions of the eye, but shall enumerate some of them only, and stress the most important ones.

1. Non-inflammatory form of glaucoma, where we have no pain and good central vision as we usually do. Without the tonometer and perimetry we must let this class get beyond reclaiming before we recognize it with the ophthalmoscope and loss of vision. At this stage there is so much atrophy that operative treatment is not of much avail. Perimetry and the tonometer will also determine for us when miotics have failed, and also determine when operative treatment should be resorted to.

2. Then there is the great group of central lesions in which fields are of value, namely: pressure along the visual tracts;

and intracranial tumors, especially those in the region of the chiasm. Fields are of great value in localization, especially in pituitary tumors; and increased intracranial pressure with choking of the disc, where central vision is very often the last to go. By checking the fields regularly, one can very often save blindness by advising the surgeon to do a decompression, if he is unable to localize the tumor. We cannot depend in these cases, upon the vision as an index for interference.

3. The great class of acute and chronic retrobulbar neuritis wherein the ophthalmoscope fails us, and where we have only the history of some visual disturbance, such as seeing objects distorted in shape and color, a black spot or spots on everything. Central scotoma can be plotted out in many of these cases, and the color fields give great assistance, since they are usually very much disturbed.

4. In accessory sinus diseases, we may be able to get valuable assistance that will help us to determine the type of operation and when to operate.

5. In optic atrophy, the fields will help us to make an early diagnosis, and also to determine the progress of the disease.

6. In functional nervous diseases, which are very difficult to differentiate from retrobulbar neuritis, we find that the recording of the fields is one of the most dependable aids. The reversal of color fields and the contracted fields even to the extent very often of five to ten degrees is found in this class of conditions.

7. In retinitis pigmentosa we are very often able to determine the prognosis as well as the diagnosis by our fields, even though we are helpless in this dreadful condition.

Many times our fields do not correspond with the other symptoms that go to make up our diagnosis. In these cases, we should refer to our text to determine whether or

not we are working toward the proper diagnosis.

The following is the report of three cases that I have had under my care recently:

1. A patient consulted me telling me he did not see well, and that he had gone to an oculist who gave him glasses. He had gone back repeatedly, but the oculist told him there was nothing wrong and that his vision was normal with his correction in both eyes. I got a careful history which revealed the fact that he had high blood pressure, and had had an attack of unconsciousness about two months prior to this time, which was followed by vomiting, and that since this time his vision had been disturbed. His fields revealed a right sided lesion back of the chiasm (homonymous hemianopsia). A report was given to his physician which should prove of service.

2. This case consulted me for refraction, giving many obscure symptoms in her history. As more or less of a routine examination, the fields were found to be very much contracted (tubular fields). Careful examination repeatedly showed her form fields to be only ten degrees. After a very careful examination of all possible causes, including neurological examination, I had to settle down on this case being a functional condition, in spite of my better judgment not to make such a diagnosis, as so often our ignorance is covered up in this manner and later we find pathological conditions. Two of the biggest factors in my coming to this conclusion were that the patient was able to drive her motor and to take her place in society without any handicap from her eyes, and that Dr. C. A. Thigpen, of Montgomery, whom I had consulted, agreed with me.

3. A man forty years of age engaged in mill work and who for the past year had been doing electric welding came in to see me complaining of a big spot in front of his right eye. This condition had come on suddenly, having been noticed only a week prior. His vision was fingers three feet, but he could see above and below as well as laterally. His vision was normal in his left eye. Stereoscope revealed central scotoma. However, the outlines were not very distinct. Fundus examination revealed some macula changes. However, this was not very definite. All examination for causes of acute and chronic retrobulbar neuritis proved negative. He was advised to discontinue welding, and to report in two weeks for further examination. At this time, his vision was 20/100. He gave a history of multiple small scotoma, which could not be outlined. Now the pathology in the macula region as well

as above and below was a very definite retinitis. There were, also, some choroidal changes. Diagnosis was evidently one of electric retinitis.

If this article has served to call our attention to this much neglected field, and, if by so doing, makes us of more service to our patients and to our fellow physicians with whom we work, I shall be pleased in having chosen this subject.

DISCUSSION.

Dr. C. A. McWilliams (Gulfport): Perimetry really does enter into the ear, nose and throat work. With involvement of the posterior ethmoid group we do get some conditions that will give us some information as to indications for treatment or operation of the sinus.

My experience in the relief of optic neuritis has not been as satisfactory as we used to think it would be. For that reason I think that the trend now is to be of service in any operative procedure where there is any involvement of the eye, in the hope of restoring the sight.

I had spoken to Dr. Odeneal to take my place in this discussion but he has been called out of town.

Dr. W. R. Buffington (New Orleans): Perimetry is most carelessly done by most doctors. We are satisfied to get an ordinary perimeter in front of a window and go over a patient's field of vision and when we have finished we think we have done our duty. Being such an important instrument in diagnosis of eye conditions it certainly is necessary to know some of the things that we should do.

Within the last few years I have been trying to impress patients and show them what they should do. It has been a difficult thing to teach them the importance and the necessity of detail in making the field of vision.

What must be the type of perimeter? The ordinary one with the standard curve is all right. I see them in the market with a bright shining surface. No field of vision can be taken accurately with a perimeter with a shining surface. It is more inaccurate in the study of perimetric vision. The front surface should be of a dull flat gray or flat black. No reflection should come from the surface of the perimeter.

Secondly, the light itself. The light should not be in front of the window at any time of the day, but equivalent to a clear sky at 1 o'clock in the day.

What is the position of the perimeter? You can't put it right here and take a complete field

of vision. There are six positions in which you have to move the patient and the perimeter. You must have the arm of the perimeter to the light so that there will not be the slightest shadow. You must have it here for the peripheral field, for the central field more like this, and reverse it and put the patient on this side, and by the time you have finished you have moved the patient and the perimeter six times.

The size of the object is an important thing. Perimetry must be done with the smallest object that the patient can see, especially when you are studying the central vision. If you are working at thirty-three centimeters your object must not be too large. The size of the target should not be over two or three millimeters.

You must have standard colors. You must constantly have your colors with the proper saturation in order to get an intelligent field. The standard colors are blue, red and green. If those colors are six months old they have so changed that they no longer have the proper saturation. All these things must be taken into consideration in taking the field of vision. It must be never taken just once, it takes time and repeated examinations to get a proper field of vision made.

Men have so much to learn about the eye, ear, nose and throat that they don't give the necessary time to the careful consideration of this particular thing. It is very important because it helps diagnose early cases of glaucoma. It will sometimes tell us the very earliest symptoms of a disseminated sclerosis. It comes in more important in all the various diseases of the brain. The frontal lobe tumor and the basal type will be made out by the oculist. The most frequent of all tumors are made out by the oculist.

Your color saturation is so important. In doing perimetry we must give the most careful consideration possible to the color, the patient and the light.

You don't have to have an expensive instrument in studying scotoma. Get a careful screen and put your patient at one meter from that and if his vision is good you use a five millimeter object.

Dr. Henry N. Blum (New Orleans): Perimetry is a method of study which has been used for many years. We know that perimetry has been neglected in our private practice for a number of reasons.

With a limited number of workers it is hard to go into all details of examination. However, those days are gone. There are a number of reasons why we should go more carefully into perimetry. One is the development of the recog-

nized, or recently instituted, specialty of brain surgery. It is time to stimulate better methods of perimetry, our appreciation of the disturbance of the optic nerve and association with sinus disease. The importance of being able to make a diagnosis at an early time has stimulated the proper perimetric examination.

Dr. Buffington and Dr. Perdue have gone so carefully over this matter there is not much left for me to say. However, I want to say that for the determination of the periphery of the fields of vision a good perimeter is necessary. Nothing will give as much service as a good, large Duane screen.

It must be remembered that the field of vision is divided into several different zones or sectors. For the proper determination of the limits of the field it is necessary to have saturation to the proper illumination, the proper size and the proper color. In the perimeter examination for determination of the periphery of the field our targets are larger than for the examination of the central zones. On an average I think a perimeter with a four millimeter target is the correct size.

Blue is very important for the determination of our colors. Blue gives us certain characteristic changes in disturbances of the choroid that we would not be able to determine by using red or green. The examination with blue will give us very important information and we will be able to determine methods to prevent danger. We know that blue is distinctly a color which has to do with the function of the choroid.

For examination of the central and pericentral region a Duane screen is fine. We can magnify defects. The further the patient is seated from the screen the larger the defect will be found to be. It must also be remembered that we must not use only one fixation point. We must use a fixation point as small as is comparable with the patient's vision.

We are prone, some of us, to have fads, but we learn by experience after a while that we must be conservative in order to arrive at the exact truth. In the importance of determination of central defects were inclined to believe that a slight enlargement of the blind spot was of some importance. We know that this is not true. We know there is a zone immediately surrounding the blind spot. We must have an enlargement of the blind spot before we can make a diagnosis of the blind spot. One of the differential points in the diagnosis of so called papillo-edema is that in a true papillo-edema we have a disturbance in the vision from the very beginning. The patient's vision changes. The examination of the fields is

one of the methods we can use between an optic neuritis and a choked disc. Two men equally good may examine the same patient and come to a different conclusion. There is a difference between neuritis and a choked disc. We know that in a choked disc we expect to get an enlarged blind spot.

Dr. Buffington has called attention to the necessity for colors. I believe there are some discs in which the colors penetrate all the layers of the paper, but even this will fade after a while. It is necessary to renew our colors from time to time.

It seems it is not proper to leave these examinations in the hands of even our best friend, unless he too, is an oculist, but we should make the field of vision ourselves and not leave it to our assistants.

One field of vision is not a measure of one field of vision, not even two. It is necessary to specify the size of the target and the time of day. We should have a seven candle power perimeter. Some examiners use a black gown in order not to confuse the patient.

I think we have a lot to learn about perimetry.

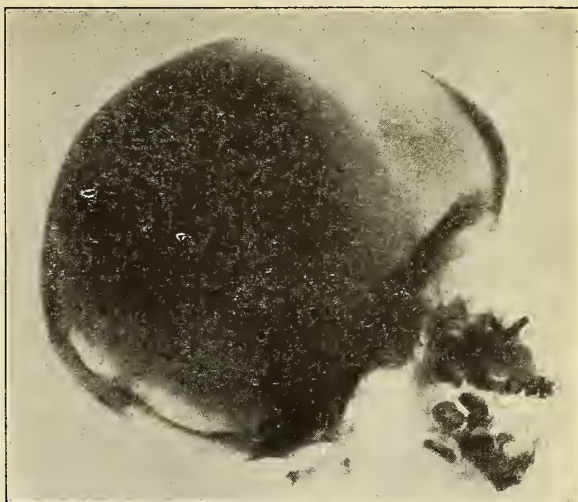
A REVIEW OF THE ROENTGEN FINDINGS OF BONE DISEASES OF CHILDHOOD.*

PRESTON M. HICKEY, M. D.,

ANN ARBOR, MICH.

Permit me first of all to express my appreciation of your invitation to meet with you today. Every roentgenologist coming to New Orleans remembers with gratitude the pioneer work of Dr. C. Edmond Kells who contributed so much to the art of dental skiagraphy. As the years roll by our sense of appreciation for those who gave their lives for the advancement of science will become keener and deeper.

The assistance which roentgenology may afford in the diagnosis of diseases of childhood is perhaps greater than the assistance which can be given with adult patients. The roentgen-ray can supplement the lack of subjective symptoms by more information of a purely objective type. The comparative thinness of the



This lantern slide is from a case of late rickets and illustrates the marked thickening of the skull in the frontal area. This thickening is produced by the osteoid deposits which are characteristic of this disease.

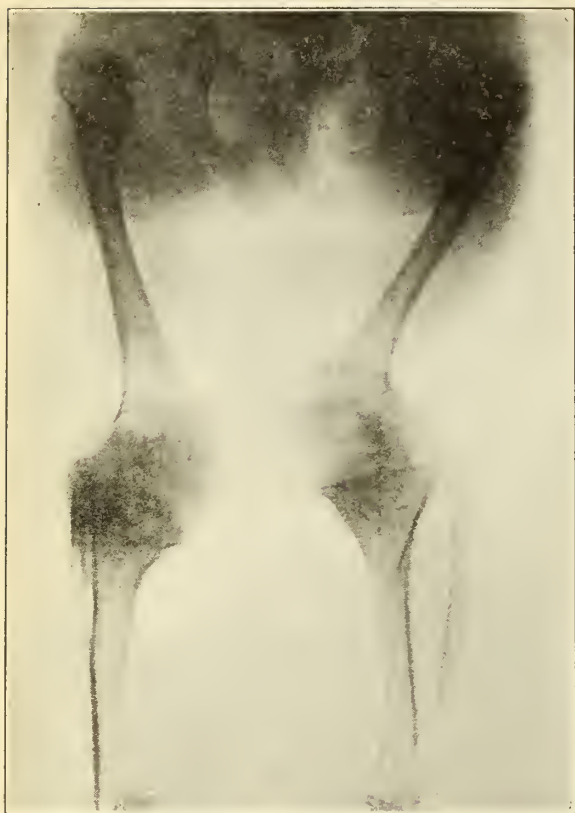
tissues permits of a better differentiation of the organs of the child when examined with this newer method of diagnosis.

In casting about for a subject which might be interesting to both physicians and surgeons, it occurred to me that it might be wise to take an inventory of our knowledge of the more important bone diseases of childhood, especially those connected with nutritional changes. The merchant and the manufacturer at intervals take stock of the material on hand, and it is worth our while as medical men to follow their example and review some of the important findings in our daily work.

The marked development of the machinery of the roentgen-ray permits us to make practically instantaneous exposures in our pediatric cases so that the blurring incident to movement of the child has been practically banished. In connection, I would like to add a suggestion, that the little patient have his roentgen-ray examination before he meets other laboratory workers, especially those who use the needle to obtain material for their examination.

We will take up some of the conditions which have their origin before birth and some of those which appear after birth as the result of endocrine disturbances, infec-

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.



This slide illustrates the striking findings in achondroplasia, found in dwarfs but not in midgets. The characteristic roentgen findings in achondroplasia are the short extremities without change in the length or size of the trunk. The epiphyseal ends of the bones are misshapen. In this slide there is marked deformity of the femoral heads and distortion of the neck and greater trochanter. The lower ends of the femora are expanded and show gross increase in the size of the bone trabeculations. The same type of changes are seen at the upper ends of the tibiae.

Although there were many beautiful pictures, there is just one point I want to speak about, and that is the first slide. I believe the trouble with most men, when they interpret bone pictures, is that they look at the roentgen-ray of a bone without any idea of what they are going to see. I think if we started our interpretation of bone roentgen-rays with some idea of what we were looking for we would see a lot more in most of them.

I should like to emphasize Dr. Hickey's first slide, which said: "What are you looking for?" You are looking for changes in bone density, decrease in lime salts, increase in lime salts, changes in architecture. If every man looking at the roentgen-ray plate of a bone would simply try to build up for himself a skeleton outline of what he ought to see in there, what he ought to look

for, and where the changes are likely to occur which mean something to him, I think instead of just having a very vague, indefinite idea of what he sees when he looks at bone roentgen-rays, he would really get a great deal from them.

That is the one point in Dr. Hickey's talk that I wanted to emphasize.

Dr. E. C. Samuel (New Orleans): There is nothing I can add. I think everybody has said everything that is necessary. I told Dr. Hickey what an excellent paper he has. There is nothing I can add.

Thank you very much.

Dr. P. M. Hickey (closing): I should like to express my appreciation of the courtesy of the next essayist for exchanging places.

In regard to osteomyelitis, I might say that I realize the point of the speaker and I emphasize it to my post-graduate students. I tell them where there is a clinical history of osteomyelitis they should put in their written reports at the end, "The roentgen-ray shows no changes in acute osteomyelitis until the end of the second or the beginning of the third week," so that of the clinician is waiting for roentgen-ray changes we should tell him, by including that little phrase not to wait. I think that is a point very well brought out, that the medullary canal may be full of pus and show no roentgen-ray changes until you have the diminution of the lime density of the cortex and the beginning breaking down of the bone.

With regard to the question of knowing the changes in the roentgen-ray appearance during the developing years of childhood we try, at Ann Arbor, to impress that on students in the Freshman year. Dr. Huber, Professor of Anatomy at the University of Michigan, very kindly extends to me the courtesy of six lectures to the anatomy students, which I illustrate by lantern slides showing the development of the body in fetal life, and also in post-natal life, so that students get an idea of the fact that the anatomy of the child is a branch by itself, and one which has to be thoroughly studied before one is competent to attempt the interpretations.

Thank you very much.

INDICATIONS FOR TONSILLECTOMY*

H. L. ARNOLD, M. D.,

MERIDIAN, MISS.

No one will question the statement that the tonsils are among the most common points of focal infection. The conditions due to focal infection and the benefits which result from the removal of the foci of infection are too well known to all to require mention.

It is in the examination of the individual cases that we most often find diverse opinions. It is evident that frequently we do not see alike or we do not think alike, for I am sure that all of you see cases which have been advised both for and against the removal of the tonsils. There is nothing more destructive of confidence than a disagreement of medical advice. I am not making a plea for more or for fewer tonsillectomies, but rather for a more careful study of cases and for a better understanding with patients as to the results which may be expected. Too often we see patients who have had the tonsils removed, and while the tonsils may have been diseased, the patients are bitterly disappointed because some systemic condition is kept active by infection in the teeth, sinuses or some other point of focal infection.

In the examination of the patient we have to consider several points:

1. The history of the patient. Certainly any patient with repeated attacks of tonsillitis is a candidate for operation, no matter how innocent appearing the tonsils may be.

2. The size of the tonsil. If there is sufficient enlargement to obstruct the throat, this alone is a definite indication for tonsillectomy. Frequently we see patients who have been told that they have

no tonsils, when really they have the most dangerous of all, the small buried tonsils.

3. The presence of pus in the crypts is sufficient indication for removal, but the presence of cheesy material is not so definite, nor do I attach much importance to cultures.

4. The appearance of the pillars is considered by some of diagnostic value, but you find few adults without some reddening of the pillars.

5. The condition of the cervical glands is to my mind one of the most important indications of tonsillar infection. Enlarged cervical glands, in the absence of other possible source of infection, especially if the glands are tender, are among the most reliable indications for tonsillar infection.

6. Systemic effects which may be due to tonsillar infection brings us in close contact with the internist. If we can find evidence of infection of the tonsils, we should advise removal of the tonsils. If there is no evidence of infection, we should advise removal only if no other cause can be found. No one can say positively that a tonsil is not a focus of infection.

In the consideration of the subject of tonsillectomy other questions arise:

1. The age of the patient. Some seek arbitrarily to set a definite age before which they object to the removal of tonsils. A search of medical literature fails to find a single instance where it has been definitely shown that the absence of the tonsils has been a detriment to the child. Apparently the function of the tonsil passed with that of the appendix. As to the upper age limit, I see no reason to set any definite age, if the patient is in condition to undergo the operation and there is a reasonable chance of prolonging life or of making life more comfortable.

2. Operations on singers and public speakers are frequently objected to because of fear of interference with the voice. If

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This lantern slide illustrates a condition which is frequently mistaken for tuberculosis of the hip, namely: Legg's-Perthe-Calve's disease. The clinical symptoms of tuberculosis and of this disease are quite similar and the diagnosis is best made by means of the roentgen-ray. The characteristic findings are flattening and often fragmentation of the femoral head; non-involvement of the acetabular cavity and the apparent thickening of the femoral neck.

tions and trauma. We would like to present our subject principally with lantern slides illustrating the findings of these various types of cases. In making this presentation we desire to accentuate first of all that the roentgen findings should always be considered as aids in diagnosis. While some findings are pathognomonic, the ultimate diagnosis will depend upon the assembly and consideration of all of the clinical and laboratory evidence.

The student of roentgenologic plates of childhood should have a familiarity with the roentgen appearance of the developing skeleton as it varies at different ages. No one should rashly express diagnosis conclusions in this field unless he has the proper background to fit him to put forth diagnoses based upon roentgen evidence.

(Dr. Hickey showed, at the conclusion of his introductory remarks, a large number of slides illustrating the roentgen findings of bone disease in childhood. Lack of space permits the publishing of but a few of these splendid slides.—Ed.)

DISCUSSION.

Dr. E. S. Hatch (New Orleans): I simply want to say how deeply I appreciate being asked to open this discussion on the paper of Dr. Hickey, who has persistently done so much for the men who are doing bone and joint surgery.

It is not necessary to go into discussion of these cases which he has presented. They speak for themselves. I feel he should be given a vote of thanks by the Society for coming here to show us these pictures.

Dr. E. D. Fenner (New Orleans): I had the misfortune to miss a very considerable portion of Dr. Hickey's demonstration.

My feeling is that, of course, there is nothing particular to say about this demonstration in the way of discussion. It is simply a beautiful collection of striking cases of bone disease in childhood, which permits us to visualize the differences between these diseases.

I feel quite sure if I had had the industry and the opportunity to make pictures of the cases I have seen, I would very easily be able to duplicate at least the majority of the cases exhibited here. The thing I feel grateful for is that somebody else has had the industry to preserve records of these cases, give us here, within a few minutes,



The roentgen diagnosis of scurvy in this case was doubted by the clinicians who said that the child had been taking orange juice for weeks. The slide shows the round ring-like appearance of the epiphyseal center for the lower end of the femur. The epiphyseal center has also in addition a homogeneous appearance which has been called the ground glass density. The pathognomonic appearance, however, of scurvy is seen in the subperiosteal hemorrhages in the lower left tibia which appeared subsequently also along the shafts of the femora. It is interesting that with the substitution of tomato juice for orange juice, the child showed rapid clinical improvement.



Cranio-cleido-dystosis is a somewhat rare condition in which we see a defect of the frontal bones and also of the occipital bone. While the defect in the frontal region is quite striking in its roentgenologic appearance, still the covering of the brain is quite firm. In the posterior portion of the skull there is a very peculiar mosaic-like formation which simulates the appearance of the wormian bones. Associated with these findings in the skull there are usually defects in the shoulder girdle with a partial or complete absence of the clavicles. During the growth of the child there is a bending of the weight bearing bones of the body, and in this case in the hip the angle of the femoral necks has been changed.

a complete atlas of the bone diseases of childhood, and permit us to visualize the difference between them.

I don't know whether Dr. Hickey made this statement or not. There is only one more thing I want to say. I feel quite certain that I missed pictures of acute osteomyelitis, and inasmuch as my service, extending over many years in the hospital, has brought a very large number of these cases to my attention, I never miss an opportunity to try to emphasize and repeat the fundamental fact that osteomyelitis doesn't show any bone changes at the very period when it needs treatment the most.

By the time you get bone changes visible in your roentgen-ray picture the patient is so sick that he is either going to die or be an invalid for months and years. I think that thing about osteomyelitis should be emphasized whenever we get an opportunity to do it.

Dr. Isidore Cohn (New Orleans): The only word, outside of appreciation and commendation,

I can add is to ask Dr. Hickey, in closing the discussion, to emphasize a bit the importance of the radiologist and surgeon, as well as the pediatricist, appreciating that the appearance of the normal epiphysis may many times mislead a man as to what he is dealing with.

I think the most notable example is where knee pictures are mistaken for so-called Osgood-Schlatter's disease. In reality, many of these are nothing but normal epiphyses with no disease associated.

If we would interpret these more often in the light of the normal appearance, fewer mistakes would be made. I hope Dr. Hickey will mention something in regard to the normal, in closing.

Dr. F. G. Dickson (Kansas City, Mo.): Through a great many years, I have always found when Dr. Hickey is on any program it pays me to be there when he gives his demonstration, because I always learn something from it, for this reason: that he always has beautiful slides, and he always says what he has to say in such a clear, concise way that it leaves you with a very definite picture of what he is trying to show.

I am sure he has a great many other pictures that he didn't get a chance to show, and I regret very much that that is so.



Slipped femoral epiphysis. This subluxation, occurring between the epiphysis of the head of the femur with the shaft, is one in which the etiology is still a matter of discussion. Many of these cases present suggestions of endocrine disturbances but these disturbances are not found in all of the cases. Traumatism is probably frequently an exciting factor although there must be a preliminary softening of the tissues along the epiphyseal line.

the operation is properly done, there is little or nothing to fear, in fact the voice is likely to be improved by the removal of the diseased tonsils.

3. Operation on patients with high blood pressure should be undertaken only after consultation with the internist, and I suspect that we are all relieved when we can return them to the internist without tonsils and without hemorrhage.

4. Tonsillectomy during active tonsillitis and peritonsillar infection is advocated by some, but this seems to be dangerous and violates all surgical principles. No doubt it has been done successfully, but the danger of systemic infection would seem too great. If done under local anesthesia, it is certainly a much more difficult operation, and a general anesthetic is not desirable under such conditions.

5. Tonsillectomy in any of the acute contagious diseases, especially scarlet fever, is advocated by some. In certain conditions this may be justified, but certainly not as a routine measure.

6. Tonsillectomy during the course of some secondary infection, as nephritis, endocarditis, otitis, rheumatism or other secondary infections which may be due to infected tonsils or adenoids, is a more reasonable procedure. In any case of secondary infection which does not show improvement, a tonsillectomy should be done, unless there is a definite reason for not doing it.

DISCUSSION.

Dr. Chas. A. McWilliams (Gulfport): I would like to stress one point in reference to the indication for tonsillectomy. It is really not so much the indication for tonsillectomy as it is the symptoms that children very often display when there is an involvement of the tonsils. In fact most children referred by the general practitioners are sent in with the advice that they have their tonsils and adenoids removed. We find quite a few who not only have diseased tonsils and adenoids, but have a para-nasal sinus infection as well.

In every case of a child who has had tonsils and adenoids removed and still has the same symptoms

they had before operation they most probably have a sinus infection. We should make it a point to investigate every child's sinuses when they consult us for the removal of diseased tonsils and adenoids. Mothers as a rule attribute all colds to diseased tonsils and adenoids and while a majority of cases are free of colds after removing diseased tonsils and adenoids some continue to have what they call head colds. They have an idea that after the tonsils and adenoids have been removed nothing else can be done for such repeated colds. These colds are practically always followed by a cough.

Recently I had a case of a child six years old. Last year I removed the tonsils and adenoids and we took a roentgenogram which showed some cloudiness in the maxillary sinuses. The child gave a history of having a cold practically all the time, but improved quite a good deal after the tonsils and adenoids were removed. The child developed a cough eight weeks ago, a diagnosis of whooping cough was made. The temperature ranged from 101° to 103°. Roentgenograms showed both maxillary sinuses very cloudy.

They were opened though the inferior meatus and irrigated. The child made a rapid recovery after the operation.

One of the indications for the removal of tonsils and adenoids is a sinus infection in children.

By Dr. E. F. Howard (Vicksburg): If the tonsils and adenoids should come out and the man finds that there is also a sinus infection, I don't know that in those cases the advice of the general practitioner is not right. When we operate on the throat we find that the sinuses very frequently clear up. We can't blame the practitioner for his advice.

I was very glad indeed to hear the little point that Dr. Arnold made on the acute conditions. A good deal has been said on that subject lately and I have known a number of men advise the removal of tonsils to cure peritonsillar abscesses. Personally, I have never had the nerve to do it and I don't think that I ever will.

There is a question of anesthesia in such operations. Local anesthesia is unsatisfactory and we don't want to give general anesthetics. Nearly all the white hairs in my head were acquired in just such a case as that. A patient had bilateral peritonsillar abscesses, and the general practitioner who was handling her insisted on general anesthesia to open them. She got the general anesthetic. She died temporarily on the table. She came to, but I have never seen a worse frightened man than the practitioner who gave the

anesthetic, and I was quite unhappy myself for a few minutes.

Dr. Geo. E. Adkins (Jackson): When I heard the title of the paper I was wondering if it would not have been much to mention the contra-indications, rather than mention the indications. Apparently one might talk a week on indications and then not scratch the surface.

Someone asked me the other day if all tonsils were diseased, and I answered them by saying that I had served an internship in a hospital in Chicago and since visited a number of large clinics, that I had seen almost every man in Mississippi in action and many in other states and that I had a few thousand tonsillectomies to my own credit, with all this I supposed I had seen more than a hundred thousand tonsils lying out on the table, and as far as I was able to say I had not seen a good one out, so I conclude from this that they are all bad and would be better out than in.

I agree with Dr. Arnold that there is no age limit. Some of the best results we have gotten has been in children as young as six months. Tonsilectomy in the young is an easy job and usually without complications, I have gone the other extreme to the age of seventy-five years and frequently a patient with a high blood pressure (one case ran as high as two hundred and twenty-five blood pressure at seventy-five years) and the final outcome was satisfactory. Within the last fifteen days I have removed the tonsils from a patient of sixty-eight years with a coagulation time of eight minutes plus. He was an undesirable case certainly, but his physician said if the tonsils were out he would have ten to fifteen good years to live and if not out he could not at least be an active man and could not live long. This bleeding time apparently could not be lowered, so after explaining to him that he was risking a life and I a reputation we proceeded. The case worked out well on the operating table, but we lost blood every day for eight days, not alarming, but enough that I spent some of the night at the bedside and was not so sure of the final outcome. I am glad to report that it is satisfactorily both to life and reputation.

Children referred to us for the removal of tonsils and adenoids may have infected sinuses. A great many of them do, but certainly we are not going to treat a chronic sinusitis in a child and expect to get favorable results without first taking the tonsils and adenoids out, and when this is done the majority of them get well. As I said before I should think the contra-indications for tonsilectomy would be a much shorter subject than the indications.

By Dr. W. H. Frizell (Brookhaven): I would like to say a little in defense of the general practitioner. I am a good deal like Ella Cinders. Tonsils are like careers—they are bad and better out. Get in favor with the general practitioner. He, like you, makes errors in diagnosis sometimes—frequently. I believe it was the Mayo Brothers Clinic that missed it in a high percentage themselves, after all the laboratory tests, etc. When the general practitioner sends you a tonsils and adenoids case you take them out. Don't criticise the practitioner. Never let the cat out of the bag. Tell the patient he has sinusitis and if you don't see fit to take the tonsils and adenoids out then treat his sinusitis. If his sinusitis does not get well take his tonsils and adenoids out. You will make a friend out of the doctor and the patient too.

If you will agree with the doctor, even though you don't do everything he says, he will believe that you are also a roentgenologist or whatever you will want him to call you. He will send you another patient.

By Dr. L. S. Gaudet (Natchez): Dr. Frizell made a remark that was very interesting. My paper yesterday tried to bring out the point of closer co-operation between the practitioner and the specialist. I wish to say that in the future, as well as we have done in the past, but more so in the future, let us try to get the eye, ear, nose and throat men and the general practitioners, closer together in the State of Mississippi.

I believe that when a general practitioner sends you a patient it is no more than right, fair and courteous on your part to write him a letter and let him know you appreciate it. In the second place, after you have examined the patient write to that doctor and tell him what you have found. If you have done any laboratory work or have had any laboratory work done let the doctor know the results. He will appreciate that and the patient will too. Sometime in the future the doctor can better treat that same patient with this knowledge so let us get closer together, because we need the general practitioner a whole lot more than he needs us many times.

By Dr. H. L. Arnold (closing): It is quite true, as Dr. McWilliams said, that in the sinus infections the first thing you should do is remove the tonsils and adenoids. We should examine the case, and if possible diagnose sinus trouble before removing the tonsils. Patients are disappointed when they have continued colds and discharge which they have been led to believe would be relieved by the removal of the tonsils and adenoids.

In acute tonsilitis and peritonsillar abscess I never like to remove the tonsils. Certainly under these conditions we are more likely to get a pulmonary abscess if not a general systemic infection.

I don't know whether Dr. Frizell thought we were criticising the general practitioner. I did not mean to criticise the general practitioner. I mean we should have closer co-operation between the specialists and the general practitioner. All cases should be examined more carefully, more thoroughly, than probably we are doing.

VINCENT'S ANGINA.*

R. A. CLANTON, M. D.,
GRENADA, MISS.

It is because of the apparently increasing number of patients who come to me for treatment of Vincent's angina and not because I hope to add anything of value, diagnostic or curative, that has prompted me to discuss this subject.

In referring to Vincent's angina, I wish to limit myself to the disease in its attack upon the tonsils, pharyngeal and nasal tissue, and mouth. Whenever the disease attacks the integrity of the peridental tissue, I refer the patient to a dentist, because I feel that the alert dentist can treat the diseased peridental tissue better than I.

No doubt this disease is as of great antiquity as that of any other specific disease, but it was in the 90's of the nineteenth century when Vincent, a Frenchman, described a bacillus found in certain types of ulcerated tonsils. Vincent, and others who worked at it about the same time, discovered that in certain types of ulcerated tonsils, there was associated a fusiform bacillus and a spirillum. There are different opinions among bacteriologists as to the bacillus and spirillum. Suffice it to say that they are always found associated in Vincent's angina.

The disease is not confined to the tonsils, but attacks the gums, hence, it becomes of interest to the dental profession; it attacks the tongue, palate and buccal surfaces of the mouth. It is also said to attack the mucus membrane in distant parts of the body. The disease certainly lowers the patient's vitality and resisting powers, causing them the more easily to fall victim to other maladies. So this Vincent's angina is of interest to all of us, the specialist in every line of medicine, the general practitioner and the dentist.

The disease is often spoken of as trench mouth, because the soldiers who served in the trenches during the World War were attacked in great numbers, and no doubt many of these men who returned home were suffering from this disease in its chronic form and thus became the source of its spread to the people of our own and other countries. So, in a sense, the disease is both infectious and contagious. Thus it has become a menace just as many of the other infectious and contagious diseases. We should therefore caution our angina patients to be careful in order that they may protect the innocent and prevent its spread. The disease is easily communicable and is spread through discharges from lesions and by carriers, and by indirect infection from common drinking cups and eating utensils. Poor food, bad air, excessive use of alcohol and tobacco are other predisposing factors in the development of the disease that deserve mention.

Diagnosis is readily and only positively made by swabs taken from infected areas, smears made upon a clear glass slide, stained and examined. The disease may be acute or chronic, therefore there are many carriers. Even when the disease is efficiently treated it may recur. Therefore, after the disease is apparently cured, we should from time to time take swabs from suspicious areas of the mouth for examination.

If the disease is acute, or inflammation has become deeply seated, there may be

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some fever and the submaxillary glands become swollen. The breath is foul and there is more or less salivation. Pain is always pronounced in the acute form of this disease, being almost diagnostic. When the ulcerations fully develop, the affected tissue resembles the slough produced by carbolic acid burn.

The prognosis is usually favorable, except when the disease occurs in the latter stages of tuberculosis and other wasting diseases. It is indeed fortunate that this destructive disease is amenable to careful treatment.

The remedial agents used in the treatment of this disease are many. After having treated many, many cases of Vincent's angina, I have come to the use of a 50 per cent solution of silver nitrate, which I apply to the parts affected. I then give a prescription of S. T. 37, to be applied to parts affected, or used as a gargle every few hours. I have found this treatment highly efficient, so much so that I rarely resort to any other procedure. However, I have some patients who did not respond to the above treatment, but who did respond beautifully to the application of salvarsan and the intravenous use of neo-salvarsan.

In reading over the literature on this subject, I was attracted by a paper written by Dr. O. C. Rigby in 1927 on the "Inter-muscular Injections of Bismuth—A Specific Treatment of Vincent's Angina," in which he reports remarkable cures of Vincent's by the use of potassium-bismuth-tartrate, 0.2 mg., with butyn.

We should bear in mind Vincent's angina when treating patients suffering from sore throat, because of its tendency to chronicity and because of its infectious character.

DISCUSSION.

Dr. G. G. Armstrong (Houston, Miss.): I think Dr. Clanton should be complimented for his good and original paper. This is very appropriate at this time, I think, owing to the rapid increase of

this disease, and which, it seems, is going to be of considerable trouble.

One of the most characteristic points in the clinical diagnosis, I think, is the dark appearance over the infiltrated spots where there are ulcerations. Very frequently we see patients who have had antitoxin given them. We do not see many cases in which this course is pursued as a safety first proposition. Looking over some of the literature it seems that the opinions of some of the men vary considerably. I notice one says that he has never seen Vincent's infection in the active state in people who have had their teeth removed. The last two cases that I have examined were very severe cases, of people who have had their teeth removed. Another says that he has no hesitancy in removing the tonsils. He thinks it helps correct the vision and reports fifteen cases with good results. Another reports post-operative hemorrhages due to Vincent's infection. Another says in unsuccessful submucous resections he attributes the failure to Vincent's infection.

The acute stage is soon over with and we have not much trouble with that as in the chronic stage. One reason is that it seems hard to keep the patient with you. They get over the pain in the acute condition and you can't keep them long enough and have them report in order to follow the cases up. Of course, it is necessary to remove all decayed teeth that might harbor infection. The gums should be treated. The general condition of the patient is important also. I have tried a great many remedies, including salvarsan and have come to the conclusion that a 20 per cent mercurochrome solution used as a mouth wash is very good.

Dr. B. S. Guyton (Oxford, Miss.): I think this is a very timely subject since Vincent's angina is becoming so prevalent, and I am glad Dr. Clanton has brought us this splendid paper and I hope we will have a free discussion.

In a paper on buccal spirochetosis by Dr. Carpenter, of Greenville, South Carolina, he brings out the fact that quite a large percentage of people are carrying the organisms even though only a few show pathology. Taking fifty cases of tonsillectomy in the order in which they came, bacteriological examination showed the spirochetes and fusiform bacilli in 50 per cent, 13 per cent showed the bacillus without spirochetes, 37 per cent showed neither. Several weeks after removal of tonsils the percentage of positive smears was much less. He comes to the same conclusion that Bloodgood does, that the organisms are rarely ever found in patients without teeth, and goes further than Bloodgood in implicating the tonsils. He brings out also the fact that there are several varieties of spirochetes to be found in the mouth

and throat, but he takes the stand that the spirochetes are pathogenic only when the fusiform bacilli are present also. The bacillus is by itself non-pathogenic. He goes on the assumption that they are two separate and distinct organisms. Others claim that the organisms are one and the same in different stages of the life circle.

Bloodgood in describing the lesion mentions that in the very beginning of an infection, "The single spot is at first a red area of irregular outline, never sharply defined, of such a peculiar redness that it might be called the erysipelas of the mouth. The center of the red area may be covered with a whitish or grayish patch which is really due to the superficial destruction or necrosis of the red mucus membrane. Beyond this superficial slough there is still a red zone. It is not unlike a minute gumma in which a central zone of necrosis, surrounded by the red zone of collateral anastomoses of increased vascularity, is recognized. In this stage, because of the little gray or whitish slough, the condition may be confused with leukoplakia, but the latter is never surrounded by an inflamed and reddened mucus membrane." He states also that, "The diphtheritic type as a rule can be distinguished clinically from diphtheria by the fact that, regardless of how diffuse the involvement or how extensive the ulceration and fibrinous exudate, the patient does not exhibit toxic symptoms."

It has been brought out that with uncomplicated Vincent's infection around the teeth pus cannot be pressed out of the lesion. In the pyogenic infections pus can be pressed from the gums.

Dr. Reasoner of the Army Medical Corps claims that, "Solution of ordinary toilet soap as well as pure soaps prepared in the laboratory have a selective action on this class of organism and have a definite spirocheticidal effect."

Of course, we all know Bloodgood has advocated the use of perborate of soda for treatment. Methylene blue, mercurochrome, arsephenamine, neocarsephenamine, iodine, silver nitrate, acetic acid and numerous other chemicals are used in the local treatment.

The intravenous injection of arsenic as Dr. Clanton mentions is no doubt the best treatment when a systemic infection has taken place. I recall a medical student who, after the local lesion had disappeared, developed a secondary pericarditis with effusion. This cleared up from the neo-salvarsan treatment.

For the local lesions I have for a long time used an application of 20 per cent glacial acetic acid. Almost immediately the patient is more

comfortable. I frequently used a mouth wash of perborate of soda. Recently I have been using a prescription given me by a dentist, which has seemed to be very efficient. I will give you this with a hope that some of you will try it out.

Wine of ipecac	3 iii
Glycerin	3 v
Fowler's sol.	3 v
Hydrogen peroxide 8.s.,	3 iii

Sig: Hold in mouth one minute several times a day.

I have enjoyed Dr. Clanton's paper. I feel that his statement that we have many carriers should be emphasized and sanitary precautions should all the more be taught in our schools and among adults. Adults are far more susceptible to this disease than children, probably due to the poor teeth and pyorrhea.

Dr. Edley H. Jones (Vicksburg): I think this type of paper is the most interesting to all of us because it is of a condition we see frequently. I had quite a discussion some time ago with one of the best dentists I have ever known, and he and his associates are of the opinion that the spirochetes are always found around the gums, especially in those cases that have so much of the so called tartar formation. His method was to always treat any mouth before even extracting the teeth. He had a unique method. It bears out the oxygen stressed by Dr. Guyton. He takes an ordinary spray pump and goes all the way around the edge of the teeth and then applies a 10 per cent solution of mercurochrome and 50 per cent alcohol and dries it off. No one treatment is apparently specific. I have adopted a routine treatment but I find frequent cases where this routine treatment does not suffice, and change to others. I prescribe a sodium solution for the patient to use at home. When one solution fails I change to another one.

There is one other point of interest in this condition and that is the fact that post-operatively you must be on the look out for infection. Two or three days after tonsillectomy if I find one of these red spotted white membranes I get busy with my neo and glycerine to eradicate the infection. I have eliminated a large percentage of hemorrhage by using this treatment.

Dr. A. G. Wilde (Jackson, Miss.): I am going to discuss the apparently specific action of soap. In the army we made the soldiers use not the ordinary Colgate's dental cream but the ordinary shaving cream on the tooth brush for their teeth. Using this two or three times a day has been finally adopted as being fine.

COMPLICATIONS OF PYOGENIC EAR DISEASE.*

J. R. HUME, M. D.,

NEW ORLEANS.

An eminent medical authority has written a book of several hundred pages upon the "Complications of Pyogenic Ear Disease;" so it is well to define at once the limitations of this paper.

Extension of these infections of the tympanic cavity to the mastoid process shall be considered as existent and this most frequent complication of purulent middle ear disease, which is obviously of great interest only to the otologist, will be considered together with the tympanic cavity as the seat of our basic foci of infection. Any further extension of this process from this focus becomes at once of almost equal interest to the ophthalmologist, radiologist, brain surgeon, and during infancy and early childhood, to the pediatrician.

Complications resulting from infections in this region may appear as toxemias, blood stream infections, or inflammatory reactions due to direct extension to the important structures in the immediate neighborhood.

Of the toxemias, those noted in infancy and very early childhood have been the subject of the most discussion during the very recent years. Alden and Lyman, in 1925, reported seventy consecutive cases of autopsies on infants who had died of infantile diarrhea, in which suppuration of the middle ear was found in each instance. Less than half of these cases had been diagnosed as otitis during life. At the Bettonean Hospital, Reinaud, in a like number of cases, found at post-mortem suppurative lesions of the ear extending to the whole petrous bone.

Practically all observers have noted slight, if any, clinical evidence of otitis; the symptoms presented being those of "cholera

infantum." The absence of pathology found in the intestinal tract at post-mortem, certainly suggests an infectious toxemia. It seems, however, that this condition is not so often noted in this climate as in the colder and more changeable climates farther North. This latter conclusion is drawn from the absence of case reports of this character from the Southern section of the country. However, co-operation between pediatrician and otologist in the study of infants suffering from infantile diarrhea, certainly seems advisable in the presence of the evidence presented by our confreres in other parts of the world.

The nature of the complications by direct extension is dependent upon the avenue of escape of the infection. If perforating the roof, or tegmen antri, a plate of bone much thinner than the mastoid cortex, we have an extradural abscess, which may, perhaps be the beginning of a cerebral abscess. Passing backward toward the posterior fossa, we may have a peri-sinus abscess, sinus phlebitis or thrombosis; extradural collection of pus in the neighborhood of the cerebellum or cerebellar abscess. Passing downward the infection may spread to the jugular bulb. This latter complication is not clinically distinguishable from a like lesion within the lateral sinus. It is evident that from whatever route the infection may enter the cranial cavity, a circumscribed or widespread meningitis may result.

Less frequent of occurrence, but of an even greater seriousness are those infections that pass by way of the labyrinth through the nerve channels into the internal auditory meatus, through the aqueductus cochlea, directly into the sub-arachnoid space, or from the vestibule through the aqueductus vestibuli. By any of these labyrinthian routes a widespread leptomeningitis is likely to occur.

Of the intercranial lesions of otitic origin, the extradural abscess is of most frequent occurrence. This term is applied to any collection of pus between the dural coverings of the brain and the contiguous bone sur-

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

face. If occurring between the dural wall of the lateral sinus and the arched plate or bone separating it from the interior of the mastoid process, it is termed, a perisinus abscess. Abscess in this location, is the intermediary stage of sinus phlebitis and blood stream infection; if in the cranial fossa, the intermediate stage of practically every brain abscess of otitic origin.

Extradural abscess usually present no symptoms other than those of the causative factor, in the tympanum and mastoid, such as localized pain, severe headache and slight elevation of temperature. That the diagnosis of this condition is usually made during the operation of mastoidectomy and the rapid recovery noted after proper surgical intervention, serves to emphasize the fact of the remarkable resistance of the dura to the action of infective organisms.

With the exception of extradural abscess, the other complications under discussion present symptoms sufficiently characteristic to permit of a reasonably accurate diagnosis. In every infection attended with severe headache, nausea, vomiting, temperature and disturbed mentality, we should at once consider an intercranial lesion or involvement of the venous sinuses.

A comparative chart of the principal symptoms, outlining a differential diagnosis between brain abscess, meningitis and lateral sinus thrombosis, would give us, in a general way, the following picture. No attempt will be made to localize intercranial lesions as that is entirely within the province of the brain specialist.

In brain abscess, the temperature is often high at onset following rigor and soon returns to normal with excursions thereafter slightly above or below. In meningitis the temperature is also high at onset following rigor, but continues at a high level during the course of the disease. The same is true of sinus thrombosis at onset, but after a few hours falls to normal or slightly above. A similar excursion is repeated within twenty-four to forty-eight hours.

The pulse in abscess is slowed, sixty to fifty or perhaps forty beats per minute; in meningitis, a rate of one hundred and twenty, to one hundred and forty, is usually recorded. Sinus thrombosis shows an acceleration during the period of pyrexia.

During the formation of brain abscess, headache is usually severe, but frequently disappears after a few days; headache is an early symptom of meningitis and persists during the entire course of the disease. In sinus thrombosis this symptom is often absent, though sometimes complained of while temperature is high.

Vomiting in abscess is projectile in character; in meningitis it is not a constant symptom; it occurs in sinus thrombosis after taking food.

The mentality in abscess is normal or mildly confused; in meningitis, the patient is semi or unconscious. In thrombosis, normal.

Eye examination in abscess may show unilateral dilation of pupil, discs may show uni—or bilateral choking. In same cases, eye findings are negative. In meningitis, the pupils are equally dilated; any change in discs being a late manifestation. In sinus thrombosis, unilateral engorgement of the disc is usually noted.

The blood picture in abscess seldom shows leukocytes above ten thousand; in meningitis, the usual range is between ten and fifteen thousand; in thrombosis, between fifteen and twenty-five thousand. The pressure of the spinal fluid is higher in abscess than meningitis; in thrombosis, normal or slightly increased.

Bacteriological studies reveal the fact that the streptococcus, in approximately forty per cent of middle ear infections showing complications, is the offending organism. However, any micro-organism capable of producing disease in the tympanum may likewise produce any of the complications under discussion.

Often these most serious complications are recognized too late for successful treatment because of their rare occurrence.

In ear infections requiring mastoidectomy, from eight to ten per cent are complicated by either extradural abscess, brain abscess, meningitis or lateral sinus thrombosis. Certainly, this is of sufficient frequency to keep us diligently watching for any danger signs that may present themselves during the course of otitic infection.

Early diagnosis with localization of the infection and immediate surgical drainage are the essentials to even a fair measure of success in the handling of these cases.

DISCUSSION.

Dr. G. C. Anderson (New Orleans): Dr. Hume has certainly covered a lot of ground in his short paper, and it seems to me it is done very well indeed.

I believe his chief plea is to bring out the necessity of early diagnosis in these cases in order that they may be referred to the particular people who might be of help in the handling of them.

About eight or ten per cent of the advanced cases of this nature can be expected to show intracranial complications and, fortunately, a large proportion of these are extradural. As he brought out, the dura forms a tremendous barrier to the infection and that in itself is responsible for the ease which these cases are handled, and the low mortality.

In certain others it occurs in the subdural space between the dura and the cortex, and the true brain abscess is one that occurs actually in the matter of the brain and is a localized encephalitis. If it doesn't become localized it doesn't go on to the point of abscess, and if the condition spreads death will intervene soon.

About 60 per cent of these cases, according to Sharp, occur in the temporosphenoidal lobe; about 25 per cent in the cerebellum, and the remaining 15 per cent occur in the frontal lobe, or in the positions which are contiguous to the point of infection under fractures, and so forth.

The diagnosis is not nearly so simple as it sounds. The cerebellar abscesses are rather easily diagnosed, but those in the supratentorial region frequently offer a very baffling question of localization far more difficult of diagnosis.

In the surgical handling of these cases there are a good many mooted questions which prove that no procedure is universally satisfactory. For example, the question of spinal puncture is debated. It is undoubtedly of value from the standpoint of cell count, globulin determination of pressure, and so forth.

On the other hand, some contend that the disturbance of the cerebrospinal circulation will favor the spread of the infection before it has become localized. A ventriculogram is often of tremendous help in localization, but it, too, carries a certain amount of risk, not only the degree of risk that is attached to ventriculography, *per se*, but the possibility of the sudden withdrawal of the pressure allowing the abscess to rupture into a ventricle, which would be a terminal condition.

I should favor spinal puncture, because I have seen many cases in which it was not followed by any adverse conditions, and I have found ventriculography a great help in some cases.

The question of the time and method of operation requires a great deal of consideration. The operation, of course, is far more favorable if it is done after the encephalitis has become localized and has formed a limiting membrane. If an exploration is made in an early stage of encephalitis without localization, the prospect is not so good for it will probably spread and become generalized.

The manner of operation is also debated. Eagleton, who has had a wide experience, favors turning down a bone flap. This, of course, gives a wide exposure and allows of a thorough exploration, but to turn down a bone flap is a major operation and requires a great deal of time in any case. If it is further complicated by an increase in intracranial pressure, and still further by a pyogenic focus, we have factors which may very well turn the scale against the patient.

A great many surgeons, notably Coleman, who has written a paper on this subject quite recently, favor exploration through a trephine opening, and these may be as many as necessary. In this way you can expect to avoid a hernia, with a fungus, which is the bugbear of the neurological surgeon.

When you replace a bone flap in the presence of increased intracranial pressure, you face a certain hazard. If you add to that, infection, your wound may break down and allow a tremendous hernia to form with a fungus, which could hardly happen through a trephine opening.

In the matter of drainage, we have just as wide a variation. Dandy, at one extreme, will evacuate these abscesses through his needle and close up

the wound without any drainage. If the pressure signs recur, he will do this again, and probably again, and he claims very good results with this method, thinking that the relief of tension will allow the brain to heal.

At the other extreme stands the method of King, a wide decompression with a complete unroofing of the abscess; that is, taking off that part of the brain which overlies the abscessed cavity, and depending on the intracranial pressure to evert and extrude this abscess with its membrane. After that, of course, he has the hernia and the defect in the skull to contend with.

Mosher uses a wire mesh cone to put into the abscess cavity, and Cahill has reported excellent results with this. Personally, I haven't had experience with the cone, but I know at times the brain will grow in through the interstices and make the removal of the cone difficult. Midway between these stand all methods of drainage.

I have seen and had some very good results by using the eye end of a soft rubber catheter through a trephine opening, and I believe that will give about as good results as any other method.

There is just one more thing I should like to say, and that is on the question of irrigating these cavities. I am firmly opposed to any irrigation. The tube can be taken out at intervals of a few days, boiled and replaced, but if it should so happen that there is a great deal of difficulty encountered in replacing the tube, force should not be used. This difficulty can be avoided by using a double drain either rubber or glass tubes, one fitting inside the other. The inside tube can be taken out and cleaned as desired, the outside tube being left in place. As the abscess cavity gradually becomes smaller the tube will be slowly extruded and can be shortened from time to time as may become necessary.

I thank you.

Dr. Homer Dupuy (New Orleans): Over 50 per cent of intracranial suppurations, meningitis and abscesses, are caused by middle ear infections. This, of course, includes the secondary mastoiditis, for the route of infection is either through the roof of middle ear or by way of mastoid antrum. Dr. Joachim, one of our pioneer local otologists, will bear out my statement, that such brain complications as abscess gave a very high mortality. But, it is encouraging that we are unquestionably reducing this terrific mortality. I limit my remarks to brain abscess. Its death rate is still too high, early diagnosis is lacking. Convulsions, slow pulse, and coma, mean cerebral pressure which is a late manifestation. Even then we may and do save lives by locating and draining the

abscess. We are now asking for more than this, we are seeking early recognition of initial symptoms of cerebral suppuration, and this antedates the pressure symptoms of slow pulse, convulsions, choked disk, amnesia, which are patent brain lesion signals.

What are these initial symptoms of cerebral suppuration, brain abscess? True, they are rather vague, and it is a question of refinements, and it is up to our alertness to recognize these first danger signals. There is a malaise, a general physical depression, a well-accentuated headache, a chill, marked or slight, with vomiting spells, and some rise in temperature. And these are the only first signs we have to work on, but if with these we have present middle ear and mastoid suppuration, we must ask ourselves is possible for such pus foci to infect the brain structures? In this particular instance, by elimination of other causes, is it not only possible, but highly probable, that with this initial clinical picture there is beginning brain suppuration? Even the suspicion of such will start thinking and working in the right direction. There will be earlier diagnosis, less damaged brain structure if we operate during this first stage and better prospect of a cure. It is the proper valuation a chill, headache, vomiting, with a co-existing pus focus in the ear or mastoid, or both, which is going to further reduce our brain abscess fatalities.

Dr. Otto Joachim (New Orleans): I am very sorry I did not hear the beginning of the doctor's paper on the complications of pyogenic ear disease. The subject of pyogenic ear complication is so vast and so enormous that it can not possibly be covered in a discussion of any one day, or even of any one week.

In the consideration of the complications of the pyogenic ear, we have to distinguish between those conditions which are due directly to an extension of the process into surrounding tissues, which are either to the brain covering, the brain, or the blood vessels or adjacent nerves, and those conditions which are due to the transplantation of pyemic material by the way of lymph or blood vessels into distant parts. The latter have always been of particular interest to me. The extension of the pyemic process to the surrounding vessels outside of the brain, causing the extradural or the subdural abscess or to the brain causing abscess, meningitis or to adjacent nerves are productive of lesions at times easily and difficult of diagnosis, calling for the collaboration of the trained ear surgeon and the neurologist. It is here, again, that the best results are obtained by their combined ability.

The recognition of brain abscess in its earlier stages or of the extradural abscess may be extremely difficult, and again not so very difficult. It depends more or less upon the exact location of the diseased process and the ability of the diagnostician to evaluate such symptoms as may be present.

I have seen brain abscess cases that walked around for quite a while before they were discovered. Some were primarily operated on for a mastoid. They went home apparently well and came back in four weeks with pronounced symptoms of brain abscess which then was operated on. Under careful and proper treatment these cases usually had a favorable termination.

Those conditions are strictly within the field of the surgeon of otology.

I want to come back to those complications of pyogenic ear disease which often affect distant parts of the body. Here we have the pneumonia of otitic origin which affects children particularly, which is of extreme importance, and occurs in the course of a pyogenic middle ear disease.

On the other hand, we have colitis of otitic origin which affects children very often causing disturbance of the bowels. They will show the diarrheal symptoms analogous to those of summer complaint, but they do not get well under the proper diet, and do not get well under the proper care of the pediatrician until the ears are examined and pent up pus material is found. With the relief of this condition, the colitis subsides.

It has been stated, and I think with a good deal of assurance, that a good many cases of appendicitis are due to infections of the ear. These are the conditions where the general surgeon, the general physician and the ear doctor come in contact and merge into the field of general surgery. The more we go back to affairs these combined efforts of the surgeon, of the internist, of the neurologist and the specialist, the better success we have in our efforts.

I thank you.

Dr. W. A. Wagner (New Orleans): It is impossible to add anything to this most complete résumé given us by Dr. Hume. As Dr. Joachim says it would take days, almost, to cover the subject, and I fully agree with him.

There is one point I should like to emphasize. Etiology in relation to ear complications. One can not cover a subject like this unless clinical diagnosis, pathology and bacterial extensions are fully covered. Consequently, etiology comes into play, and on that basis I should like to say just a few words.

In speaking of etiology, it becomes necessary to classify mastoids before discussing complications. As the topic of the paper is "Complications of Pyogenic Ear Disease." In the classification, all the membranous ear diseases, the pyogenic and the hemolytic streptococcus infections, the specific ear diseases, syphilis, tuberculosis and diabetes. In the classification one would not leave out specific ear diseases in its relation to complications, as pyogenic infection usually follows the specific diseases. The specific infections are usually complicated by cellulitis in the soft parts, extraperiosteal abscesses, Bezold's abscesses, cellulitis in the neck, descending deep cervical cellulitis in the mediastinum, and occasionally intracranial involvement.

The membranous type—diphtheria, is frequently complicated by pyogenic infection with its complications.

Next, the hemorrhagic mastoid, or the hemolytic streptococcus infection. This type of mastoid gives us our greatest and frequent complications, as septicemias, thrombophlebitis of the mastoid and lateral sinus thrombosis. This probably worries most of us, and is non-pyogenic.

The true pyogenic mastoiditis and middle ear infections are of two types; type I a true purulent type, or the so-called "coalescent mastoiditis." Into which group would fall streptococcus pyogenes, staphylococcus, colon bacillus and pyocyanus. The pyocyanus is a very desperate organism in our branch as far as its complications are concerned. Many times you find pyocyanous abscesses of the brain. The other type is type II: the mucopurulent. In that type we have four, the influenza, the pneumococcus organism No. 1, No. 2, and, worst of all, No. 3, or the micrococcus or diplococcus capsulatus mucosus. It is the bugbear of that coalescent type in contradistinction to the hemolytic type. The mucosa type or the pneumococcus No. 3 is the type which rarely gives us our lateral sinus thrombosis, but frequently produces our extradural abscesses and, most of all, our meningitides and many of our encephalitides. Rarely does it produce brain abscesses, because of its virulence, after striking the meninges. It is so virulent and so violent that it doesn't give the tissues time to wall off the infection to produce abscesses. This I mention in contradistinction to the true purulent types enumerated above which give us our brain abscesses.

Dr. J. T. Crebbin (Shreveport): The simplicity of this paper appeals to us. Dr. Hume has covered the ground thoroughly, so there remains little for us to add, excepting, possibly, to emphasize a few points: first of all the early recognition of these complications are most important. We

should bear in mind that almost any infantile disease may have complications.

Relative to the early diagnosis, this is necessary, in fact, the success of our treatment depends upon this knowledge to a great degree. Nausea, vomiting and headache almost invariably point to brain complications.

It is essential that the pediatrician, the neurologist, brain surgeon and the otologist should be in closer co-operation than heretofore, so as to intelligently treat these complications.

The very fact that we are now operating sooner than before points to better team work along these lines.

By more conscientious and more intelligent investigation, brain abscesses are being recognized, the proper treatments are being given, thus reducing our fatalities considerably. The early recognition of complications and early operative procedure are most essential if we expect to cure our patients.

Dr. W. M. Johnson (New Orleans): The structures most concerned in infections of the upper respiratory tract are the faucial tonsil and the adenoids, the central mass of Luchka's tonsil. Bacterial infection here finds lodgement and is swept into the blood and lymph circulation. Few discoveries in medical science surpass in importance the fact that the pharynx is the origin of most ear affections. Otology has made its greatest strides since Meyer of Copenhagen, in 1874, discovered adenoids. This was the nucleus of our present day knowledge of exogenous otitis media.

As a matter of fact the adenoids, which are ordinarily removed for the relief of both nasal and eustachian involvement, are only one portion—the largest, it is true, but only a portion—of the mass of lymphoid tissue which is to be found in hypertrophic conditions. The removal of adenoids and tonsils relieves most cases and is sufficient in others to entirely eradicate aural disturbances, but we know that in many cases surgery alone has failed to clear up the otological pathology. The reason can be explained by referring to the anatomy of the angle of the pharynx and the pathological changes to be found in those cases which do not yield to surgical intervention alone.

The fossa of Rosenmuller has been given little attention anatomically and pathologically. When seen by the aid of the pharyngeal mirror it appears as a slight depression, oval in form, its largest diameter nearly vertical and situated behind the posterior rim of the eustachian orifice, forming the recess or angle of the pharynx be-

tween the lateral and posterior walls. The true anatomical formation of this fossa modifies greatly its importance. The depression which we see with the mirror is merely the orifice of a conical cavity, one-half to three-quarters of an inch in depth, extending along the posterior wall of the eustachian tube—a blind pouch, with the apex outward, nearly opposite the isthmus of the eustachian tube. In the orifice and dotted all over the inner surface of the fossa is found adenoid tissue, which, in conjunction with the swollen and thickened mucus membrane in inflammatory states, retains within the cavity mucus, and when infected, a mucopurulent secretion.

This cavity becomes a cesspool for infectious material, and is the last portion of the pharynx to clear up after an inflammatory process has been present, remaining filled with mucus and mucopurulent material, after other structures are entirely free.

During this period the patient almost invariably has occlusion of the tube, tinnitus and slight deafness. Catherization produces a muffled sound, with bubbling of mucus and then a clear passage of air if the tube opens, to be followed perhaps, immediately by closure, and the same uncomfatableness as before.

The tube is closed not from within so much as from its posterior wall being pushed forward against the anterior wall by the pressure of a swollen, edematous, infected pouch—the fossa of Rosenmuller—behind the eustachian tube. A continuation of this condition results in a chronic thickening by hyperplasia of tissue, so that the tube is permanently narrowed or occluded, which leads to otitis media and deafness.

Our first problem is to eliminate the focus of infection in the upper respiratory tract, remembering that it is caused by an over production of lymphoid tissue which covers up and closes in an area which has become infected. The continuation of the effort which nature makes to eliminate this infection builds up lymphoid tissue and thus holds the infection deeper and more affectually.

Dr. G. B. Collier (New Orleans): Dr. Hume has covered the subject very thoroughly. I have seen Dr. Hume achieve some remarkable results in some of these complications. I want to speak on the etiology for a minute, and to make a plea for early prophylaxis. I believe the ultimate aim is to decrease the death rate, and I think that is why we shouldn't leave this unsaid.

The way I wish to make the plea for the prophylaxis is, first, when a bad cold comes on to use a vasomotor constrictor to the nares to promote drainage so that some of the discharge will go

down in the child or adult and be swallowed instead of going into the eustachian tube and causing an otitis media. But if this should supervene, do a wide open tympanotomy at once.

Again I want to urge closer co-operation between the pediatrician, the internist and the ear, nose and throat man. I think we ear, nose and throat men are not doing our duty. I hear a few of the pediatricians kick because they can't get an ear man out to see their cases. When we do and they have a red drum and high fever frequently we don't open it. They have some right to make that kick. I want to take a plea that the general practitioner and the pediatrician (I know most of the pediatricians are doing it now) have their otoscopes and observe the ear drum every day; e. g., be on the lookout for otitis media.

When they find a bad cold, influenza, or any other fever complication which they can't explain, but think it is due to pyelitis, the ear should be examined in any unusual case where they can't explain the fever. Examine it daily, if necessary, and open the ear drum at once when indicated. We will have fewer mastoids and fewer abscesses to do.

Dr. M. P. Boebinger (New Orleans): I want to compliment Dr. Hume on his excellent paper, and also compliment the men who have so ably given him their support. His paper has brought out a nice lively discussion, a friendly one.

I want to recite a few instances of complications that I have met with, and one that was brought on, I believe, by Dr. Joachim.

Very recently it has been my very unfortunate experience to have a double otitis media brought in from out of the city. We did an early tympanotomy. I had about given up the idea of the one incision through the drum membrane. Some years ago I read a very good article on multiple incisions, and since having that article it is now my practice to make multiple incisions. I am not saying where the drum is bulging make your one big free incision, but make several.

By the way, gentlemen, let me caution you not to overlook the opposite drum, because it may look very well at the time you do a tympanotomy on the one side, and several days afterwards you are forced to do a tympanotomy on the other side. Never overlook the fact that a patient has two drums.

In this case we did an early double tympanotomy. This patient was seen by a very able and

very competent friend of mine, a pediatrician. After several days this child developed a pneumonia. The history was negative as to some nasopharyngeal disease, such as adenoiditis or tonsillitis, as far as I knew or could get. The child subsequently died. This is one of the complications that was not brought out.

I want to recall an experience in my own family in which I lost a very dear cousin. That was before I had taken up medicine, but today I can very readily and easily recall some of the symptoms. There was no history of a middle ear infection at that time. Dr. Matas saw the case, which subsequently proved to be a temporosphenoidal abscess. At the time, my aunt was opposed to having the brain taken from the body, but through my insistence we removed the top of the skull and got the brain. It was opened and is now in the museum at Tulane. That case proved to be an abscess of the brain.

Another case that I had some time back and lost was where I did a mastoid following middle ear infection of an old, chronic type where the pus had worked its way up beneath the muscles of the scalp. We had an awful time with that case. There was pus galore. I can't recall the organism at present, but I know I was forced to call in help, and we drained and drained, and continued to drain. We used tubing, and everywhere that we found a pus pocket we would drain some more.

There is so much to be said on the subject, gentlemen, but there are probably some others who wish to speak. My time is limited, but I want to make this plea, as some other gentleman has just said before me: You can never open a drum too soon, but rather too late.

Dr. John R. Hume, New Orleans (closing): The paper has brought out exactly the line of discussion that I had hoped it would. A subject such as this encompasses such a vast field you can barely give an outline, but the gentlemen, each and all, have added a great deal to the differential diagnosis, as well as a fuller idea in the way of treatment.

I appreciate Dr. Anderson's care in preparing his discussion, Dr. Dupuy, Dr. Joachim, and all the others. I was sorry some pediatrician didn't give his experience with the cases of middle ear infections attended with cholera infantum.

I think there is nothing at all that I can add further to the very excellent discussion, and I thank you all.

SERIAL PYELOURETEROGRAPHY.*

ITS VALUE IN MEDICINE.

ABRAHAM MATTES, M. D.,

NEW ORLEANS.

The present day status in the diagnosis of urological conditions is dependent on the use of the roentgen-ray machine and on the perfection of cystoscope, catheter and contrast media employed in urography. Urinalysis, chemical, microspic, and cultural is essential where infection plays a role, and necessary as a routine measure preliminary to instrumentation.

For a detailed study of the upper urinary tract one must visualize both pelvis and ureter. This visualization is best accomplished by resorting to some standard method of injecting the urinary tract that will give results in the maximum of cases. Serial pyeloureterography and pyeloscopy are the only two methods that can give the information desired in every instance. Pyeloscopy, or fluoroscopic visualization is

beyond the scope of most clinics and medical centers, requiring expert handling of patient and machine, and the use of costly apparatus. Pyeloureterography by the method to be shown is available wherever there is a roentgen-ray machine.

Most urologists are satisfied with their technic of injecting the pelvis and ureter, and with the particular solution, percentage, and quantity used. The failure to take more than one or two plates, and then only for the diagnosis of tumor, stone, hydronephrosis, pyonephrosis, ptosis, malformations, and stricture of the ureter, has led many of us to return a negative diagnosis in disturbances of the functional ability of pelvis and ureter. Disturbances in the ability of pelvis and ureter to properly empty the urine secreted by the kidney form not a small percentage of the cases referred to the urologist for diagnosis and treatment. These cases have been through the hands of surgeon, internist, roentgenologist, orthopedist and psychiatrist with no relief from symptoms and no diagnosis at hand. Gall bladders and appendices have

*Read before the Orleans Parish Medical Society, April 22, 1929.

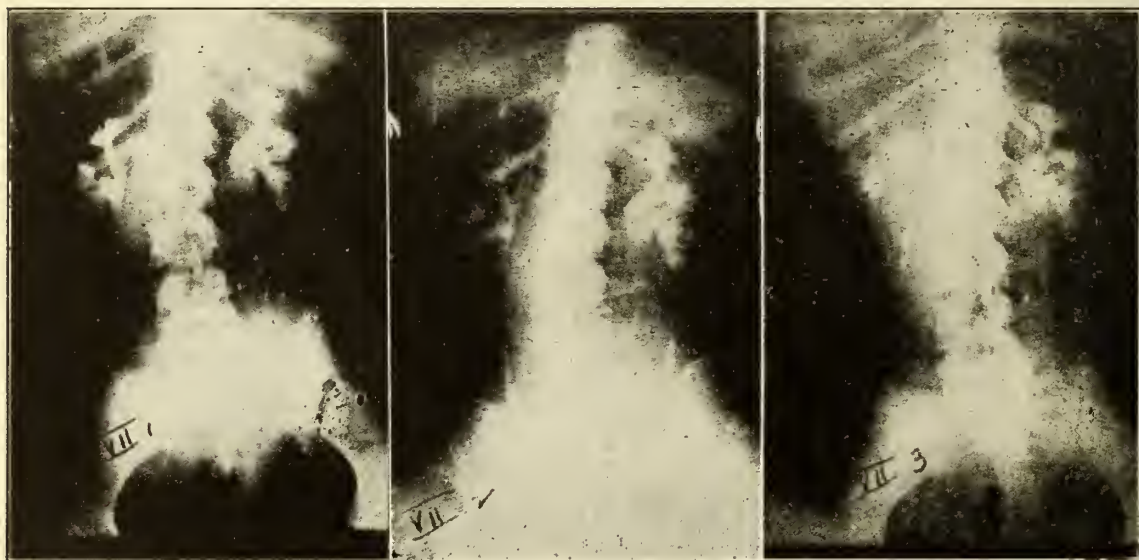


Plate VII.—R. W., white female, aged 19 years, admitted to hospital with diagnosis of subacute pelvic inflammatory disease and pyelitis; onset, fever 2 days ago; pains in lower abdomen; cystoscopy: 2c.c. stasis on right side, 13 c.c. on left side.

Pyelograms show bilateral ureteral stricture. On the right 3 cm. from bladder, and on the left at the uretero-pelvic area and mid ureteral area.

There is a right hydropelvis and moderate hydro-nephrosis on the left side with 5-minute stasis.

I—Pyelogram. II—Pyelo-ureterogram. III—5-minute stasis.

Left pelvis (hydronephrosis). This case improved with ureteral dilation.



Plate XVII—C. G. C. F., aged 40 years; pains both lumbar areas 6 months; chill and fever. 1—Dilated right pelvis and clubbing calyces, (old pyelitis). 2—Ureterogram. Stricture near right uretero-pelvic area. 3—5-minute right pelvic stasis.

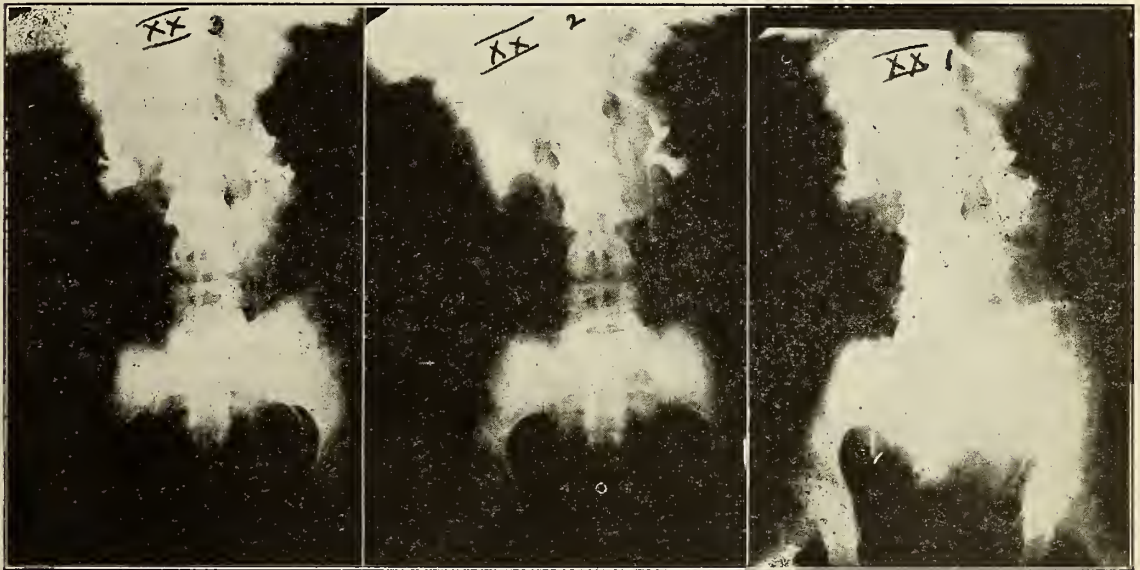


Plate XX—E. D., white female aged 49; pains in back and right side radiating to bladder and leg; onset 3 to 4 years ago; attacks worse lately. (This plate is numbered right to left.) 1—Pyelo ureterogram shows dilated right pelvis. 2—Ureterogram negative. 3—5-minute picture. Bilateral pelvic stasis and left ureteral stasis (spastic).

been sacrificed and in women every gynecological procedure has been performed, and the patient still complains. Symptoms are referable to the side, abdomen, posterior lumbar areas across the spine, and in the tubo-ovarian region. Pain may be localized to these areas or radiate to bladder, down the back and side to the thigh, or up to the chest,

depending on the reflex arc. The intimate association of renal pelvis with the semi-lunar and aortic plexuses of sympathetic nerves accounts for the variety of symptoms noted and their similarity to organic diseases of the various abdominal organs. In these cases of upper urinary stasis the urine may be negative but for the presence of a few red blood cells, which is the rule.

The writer has stressed the value of his flat sac method of pelvic instillation in several articles. His use of stronger solutions of sodium iodide than recommended is essential to the technic employed. One can readily appreciate the value of using a small amount of sodium iodide solution, an amount that will not distend or dilate the pelvis, and that will give a true picture in almost every instance. It is essential that the catheters be passed to the pelves of the kidneys, for in no other way can they be as well outlined without interfering with its proper functioning, causing spasm and faulty readings. It is more physiological to fill the pelvis with catheter in it, or as high as it will go, than to cause the fluid to run up the ureter by gravity, syringe or pressure gauge method.

Goldstein, in 1921, made a study of the normal ureter by fractional uretero-pyelography and stressed the value of the method. This paper was purely experimental, and made no mention of its value as a routine measure. In 1925 Goldstein writes of its value in determining ureteral stasis. After introducing his catheter and withdrawing it low in the ureter, he distends the pelvis to the point of symptoms, both features objectionable from a physiological standpoint.

The technic advocated by me and reported in 1926 before the American Medical Association, and in 1928 before the Southern Medical Association has not been altered. It has proven its value on many occasions, in contrast to any of the methods in use to day.

A number four to six ureteral catheter is passed to each pelvis. Usually a No. 4 to 5 passes easily. Each side is aspirated and the amount of urine withdrawn noted. As a rule it is less than 2 to 3 c.c. Urines are collected and any tests necessary performed. With catheters in situ, the first roentgen-ray picture is made. This outlines the course of the ureter and its relation to kidney and other structures, as well

as any abnormality that would cast a shadow. The second plate follows the injection of three to four c.c. of 25 to 40 per cent sodium iodide solution on each side.

The catheters are blocked to prevent the escape of media used. This picture outlines the renal pelvis, and the ureter, when there is leakage alongside the catheter.

The third picture is taken following the simultaneous withdrawal of catheter and injection of one to three c.c. of 25 to 40 per cent sodium iodide solution. This picture outlines both renal pelvis and ureter, and occasionally the bladder. Hyperactivity of the ureter is here by the absence of a shadow along its course.

A fourth picture is taken in the same position five minutes later, the normal emptying time of pelvis and ureter. This picture gives the degree of stasis in pelvis and ureter and at times the outline of the bladder. Occasionally more plates are taken, as in hydronephrosis.

Disturbances at the uretero-pelvic area when present are noted in several films, of great value from a diagnostic standpoint. A stricture of the ureter will always show a retention of solution used. This retention may be limited to the ureter, a segment of it, the pelvis alone, or the caliceal system in part or as a whole, or the entire tract may be involved.

Over 500 cases were subjected to routine serial bilateral pyeloureterography and in an analysis of 140 of these cases reported elsewhere, stasis was noted in 62 cases, or 44 per cent.

In this series 17 cases showed right pelvic stasis; six left pelvic stasis; 17 bilateral pelvic stasis; 1 left ureteral stasis; 2 bilateral ureteral stasis; 9 bilateral ureteral stasis; 8 right pelvic and ureteral stasis; 2 left pelvic and ureteral stasis; and one right pelvic, right ureteral, and left pelvic stasis. In a fair number of the remaining 56 per cent ptosis, tumor, stone, stricture and tuberculosis were noted.

Stricture of the ureter in some cases was associated with good drainage. When drainage is normal at time of examination, the urinary tract should not be ruled out, especially when there is a subsidence of symptoms. Were an examination made when symptoms are present positive findings would be noted. Intermittent stasis does exist and should be remembered in order to properly interpret the status of a case. Difficulty in passing a catheter of small caliber considerably aids in a diagnosis, in the absence of other findings.

Ureteral catheterization and dilation using preferably number 5 to 7 ureteral catheter or bougie will bring about a cessation of symptoms and restore the patient to his former status. The simplicity of treatment is a marvel to the patient and the comfort afforded places this class in the grateful group. Serial pyeloureterography offers these cases of stasis a positive method of diagnosis and assures an intelligent method of treatment.

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DISCUSSION.

Dr. W. A. Reed (New Orleans): I wish to congratulate Dr. Mattes on his excellent work and state that I believe it is interesting not to the urologist alone, but to the surgeon, the gastroenterologist and the internist as well. There is no question about the superiority of pyeloureterography over the methods previously employed. It is the only real means of demonstrating obstructing lesions in the ureter. About five years ago we were all interested in wax-tipped catheters, bougies and other devices to determine strictures of the ureter, but the results obtained were often discouraging. These methods have been almost entirely replaced by the pyelogram and the pyeloureterogram. Dr. Mattes stated that the pyelogram does not necessarily have to

show a dilatation of the kidney pelvis to indicate that there is urinary stasis in the pelvis. Many of the ureteral stricture cases show renal pelves that are perfectly normal in size, shape, contour, etc., and yet these are present definite strictures of the ureter. One may very easily insert a No. 5 catheter in the ureter as carefully as you can, and discover no evidence of obstruction, and yet a definite stricture be present, which later will show up plainly in the pyeloureterogram. I, personally, do not like to use the double pyeloureterograms. There is a great deal of argument pro and con on that subject, and any number of men have recently written on the use of bilateral pyeloureterograms and the absence of any danger in its employment. I base my belief on the appearance of the bladder following the injection of solutions of sodium iodide in making cystograms. Very often in cystoscopic work we see a bladder a day or two after the injection of sodium iodide or sodium bromide solutions which shows definite and intense inflammatory changes. So I feel much better if I do a single pyelogram at a time because I believe I am inflaming the kidney pelvis to a certain extent with the solution used. This may be disproven later, but at the present time I am advocating unilateral pyelograms. We handle a large number of stricture cases in the Clinic at Touro Infirmary. Drs. Wolf, Campbell and Adam have done a great deal of work in pyelography and they have used not only the old methods, but have worked on the lines Dr. Mattes has shown us tonight. In making serial pyelograms we have added one more position, the erect position. We make one picture lying down with the catheter in the ureter; one in the recumbent position in which the kidney pelvis has been injected; the third picture erect with the pelvis injected; the fourth picture is also taken in the erect position with the catheter withdrawn, believing that this will favor drainage a little more than the recumbent position and that, if there is stasis present in the renal pelvis, the erect position will promote drainage to the fullest possible extent. Many of these cases have been referred to the clinic by the gastroenterologist. Many are patients in whom gastric symptoms have persisted for eight to ten years with gas accumulations, periods of diarrhea and periods of constipation. In some the appendix was removed, in others the gall-bladder removed. On careful study we found these symptoms frequently due to ureteral strictures and that they responded rapidly to urological treatment.

Dr. J. Holmes Smith (New Orleans): I believe that Dr. Mattes' paper should be taken to heart, not only by the urologist, but also by the

have been interested in the number of patients who return after appendectomy and continue to have their trouble.

Recently I decided, or thought, I would like to investigate from fifteen to twenty-five cases coming in with right-sided pain in whom the diagnosis of appendicitis was formerly justified. I have tried to have several things done: stool examinations for parasites; a radiogram for calculi and also to show arthritic changes, a gastro-intestinal series to show what was in the appendix; and lastly a pyelogram. Dr. Mattes has run a dozen cases for me and the result is almost startling; almost all these patients, in addition to stasis, etc., have shown some disturbance in the ureter or kidney. One patient gave a history of right-sided pain, but the pathology was located in the left side. Of course we must not forget that there are many conditions capable of producing the same symptoms, also that there are various ways of arriving at a diagnosis, but I certainly, for the present, believe in the need of pyelograms as an aid in the diagnosis of right-sided pain.

Dr. A. Mattes (closing): I certainly appreciate the comments of Dr. Reed with regard to the taking of pictures in the erect position, in addition to the plates already shown. The object is to get the plates down to the least number required, and also the simplest method that anyone can use anywhere. Sitting up of the patient, unless you are dealing with a modern table, is a problem. To allow the patient to sit up or stand against the wall will certainly increase the disturbance already present, cause reactions, and is not conducive to greater comfort. For that reason it is necessary to eliminate as much handling of the patient as is possible.

What you have seen tonight is something new to you, *i. e.*; the evaluation of the presence of functional disturbances of pelvis of kidney and the ureter. Most of the work coming from the greater clinics deals with the major disturbances of the kidneys, pelvis and ureters, and not disorders of function. This is a phase that has been studied by comparatively few men and a phase of the work that will be studied by more as time goes along. Cardiospasm and functional disturbances of the heart and functional disorders of the stomach are all familiar subjects to you and volumes have been written on them. I am merely showing you tonight a method of studying functional disturbance of the urinary tract along more physiological lines than heretofore.

HEALTH AS RELATED TO PUBLIC SCHOOLS.*

JOSEPH O'HARA, M. D.,

NEW ORLEANS.

In trying to discuss a matter so important as this is, I think it needs careful consideration, and I am exceedingly sorry to hear that Superintendents Harris and Richardson are unable to be here, because it was through them that I intended to try to make an inroad for public support of the action of the Louisiana State Board of Health to the proper education of those children at the plastic age where they would be able to take on that part of their resistive power, in medical studies known as behavior and habit response. This, the State Board of Health intends to try, and will succeed I know because we have already sent out and made a splendid experiment through the assistance of the United States Public Health Service under the watchful eye of Dr. Akin.

Dr. Unsworth, the representative of the State Board of Health, has gone into the several units in the northern and eastern parts of the state of Louisiana. He has gotten into the graces and thoughts of the teacher in trying to get to the young student who is reported by the teacher to be a little upset in his habit and behavior responses. We try, through this method of building up this system in Louisiana, whereby we shall be able to get into the education of a child at an early age, to teach him the benefit not only of health from a financial and physical, but also from mental standpoint. We intend to try to educate the child into a system of living and behavior so that he can go into his own home and teach his parents that one of the most important branches of educational life and development is mental hygiene. We expect to attract a very broad field with something entirely new in the South. It is something of a gigantic success in the North and West.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

The Juvenile Institute in Chicago is making a splendid monument of success in its development of juvenile delinquency through this method. I feel, with proper co-operation from the health societies, from the police jurors, from the school boards and school functions, and with the co-operation of the teachers and their assistants, something can be accomplished along this line. Of course, you understand the state of Louisiana is not as well off as many big cities in the country. For instance, the state of Louisiana gets \$300,000 a year to maintain its health project, while the city of Chicago, with 3,000,000 population, gets \$1,975,000, or 33 per cent per head. If we had that amount of money to do something along all health lines, I feel that the educational standards of the state of Louisiana would be comparable to any other in the country.

I am just trying to take advantage of this particular moment to let you know that when Dr. Unsworth, the representative of your Louisiana State Board of Health, comes into your parish, I beg and ask of you to give him the co-operation that he intends to give. He is not going to be antagonistic to the police juror, to the school board, or to the Board of Health. He intends to do what the head of the organization of the Louisiana State Board of Health is trying to demonstrate to you it intends to do. Anybody who tries to control health matters through force, through courts, through lawyers, is making a very serious mistake.

I have told you physicians here today that the status of the Louisiana Board of Health was absolutely along lines of education. I have told them repeatedly that they know more about their parishes in ten minutes than I know in a year, and I want them to feel that the Louisiana State Board of Health is subservient to their action in their particular parishes, and we are willing to do what they ask us to do for co-operation and for education along health lines.

I am therefore going to ask you gentlemen out in your parishes, when we come through there, to give us your assistance, to give us your ideas, to give us your dictation as to what manner and means we should use in trying to get into the child-life of the state of Louisiana for proper education along financial, social, mental, physical and economic lines.

DISCUSSION.

Dr. J. R. Carter (Harrisonburg, La.): It is the disappointment of my life this morning that the Superintendent of Instruction of Webster Parish, and the State Superintendent of Instruction are not here. I had hoped to hear those gentlemen tell the lay viewpoint of the healthwork. It is a large subject; it is a tremendous subject. It is possibly the keynote to all of our public health and medical work.

It is from the schools that we learn, to the largest degree, what is going on in human development. It is through the schools, in the largest degree, that we broadcast the latest and newest and best information to those thousands upon thousands of parents, and those other grown-ups who have never been in school. I was in hopes that we would be able to make a very pleasant contact this morning with the lay directors of education and health work in the state.

As director of the Catahoula Parish health unit, I must state that I came into this state and into this parish with a view of coming right down close to the problems that have baffled me during my life. I have been a physician, I have been a surgeon, and I have been an obstetrician, and I know something of what it means. In 1898, at eighteen years of age, I entered medical college little knowing what was going to confront me. All the way through college I worshipped the professors; and we had lovely professors, wonderful men, men of high ideals, men who hoped to carry a message to us, and men who hoped to see their students go out and do something that would be a credit to the profession.

After I got out, a young man twenty-one years of age, I went to northern Michigan. I was surgeon for the shingle mills, lumber mills, little farms and railroads, all alone out in that wild district. I saw how little the people knew about what a physician or a surgeon or a health officer meant. They rather figured he was some kind of a peculiar, miraculous, mysterious individual, and they only used him when they had to.

It takes time and experience to bring before us these wonderful things, and I readily see that

many, many physicians today do not quite understand the place of the health director of the health unit in the parishes as we find them today. If you will glance for one moment with me over the setting of the health unit director, or the health officer and director in the parish, you will see that there is something vastly deeper than what is written on the surface of newspapers. You will notice that, beginning with the United States Public Health Service in Washington, D. C., that tremendous, grand organization reaching over to that great organization, the Rockefeller Foundation, coming on over to the State Board of Health, what a tremendous trio it is, surveying the dilapidation and disaster of the 1927 flood.

They interview the police juries, they interview the school boards, and they tell people what forces are lying at their command. As a result of their combination, this doctor is picked to go to that parish, to represent those three great organizations with all their experience and all their knowledge and carry that message to the people so they may understand it and, as a result of understanding use it.

The sum total of it is this: that the foundation laid is fine. It comes up to the responsibility of the man who is directly in contact with those people in that parish to be able to know and understand the setting, and be able to utilize every asset in that parish that is going to bring about a certain, slow but certain, change in the viewpoint of the people, and the resulting activity among those people that is going to eliminate what the doctor was talking about in the beginning, insanity, feeble-mindedness, defective minds, and all that sort of thing. It is going to bring a change of viewpoint with regard to the disposal of human excreta. It is going to bring around the viewpoint that will handle readily the purification of water, the screening of houses and the elimination of the bites of mosquitoes with all their disease and molestation. It is going to bring about drainage surrounding these homes, that will not bring into the home the filth of the ground from animals, and man likewise, and insects, and all that goes with it. It is going to bring about that understanding of living whereby men will reach out for their families and get a balanced diet. They are going to have meat and eggs, and all that goes into the protein class, and they are going to have all the vegetables, fruits, cereals, and through an understanding will get a balanced idea of what is necessary to maintain the human body in growth and health.

Oh, this is a big thing! We go into the schools. Why? Because the schools offer us an aggregation.

Doctors, just imagine a parish of 437 square miles that is almost impossible of approach, that is largely swamp roads. It is only possible to get to most of the parishes three months out of the year. Other parts of the parish we get to readily. However, we have 437 square miles.

Our unit is composed of a director, a nurse, and a secretary. Just imagine how far a director, a nurse and a secretary are going to get with 11,600 people in an area of 437 square miles in the course of one year. We have to survey the whole situation and then fit ourselves into the groove whereby we can drive ahead, pull in and take to our assistants anything and everything that comes along.

So we go into the schools because there we have the aggregated children of the whole parish. By getting to those children we start in the evolve, to get the information necessary to give us the cue as to how to approach these things, how to get into them, and how to get results.

After all is said and done, men, if we do not get results our work is a failure. As I tell the children when I go into a school for the first time, I go there to survey and look them over. I say, "Boys and girls, I mean business. I am the director of the Catahoula Parish Health Unit. I came here to change the health conditions in your community, and with your assistance we are going to do it."

The little fellows are just as important as are you big men. I put more confidence in the little fellows today than I do in you big men. I don't care how hostile the whole community may be, if I get the children on my side the community is going to like me soon. Get that? The children are going to move this nation; they are going to move it in health; they are going to move it in spirituality; they are going to move it in wealth, and when the children stop doing it, it is all gone. The older fall by the way. The children are the hope of the nation. The children of my own home and the children of my neighbors and the children of my parish keep me living. If it weren't for them I couldn't get an inspiration to move one way or the other in this wonderful scientific work. The children furnish the motive. There is a reason for everything. We grow for our children.

The health units today of the neighboring parishes are reaching out in a similar way. I have had the most pleasant contacts with those men. I have had the most pleasant contacts with the physicians co-operating with those men, and I am here to tell you that it is astounding to me. I have been in Catahoula Parish but a year and a half, but I can see the most phenomenal changes—most phenomenal changes. I see Mr. Bote's work scat-

tered all over this state. I have been over most of the state and I see it. It is growing, and it is going to take care of our sanitary disposal of human excreta.

There is one principle that the Catahoula Health Unit stands firmly on, and that is the dividing line between the responsibility of the health unit and the responsibility of the physician. That is an important line. The health unit director is the link in the chain between the masses and the physician. In order to make the best possible use of the health unit, the physician must strive to learn what the work and objective of the health unit director is. Then there is going to be a team that will go over this United States of America greater than anything that has ever happened, and I don't mean maybe. I am sold on my work, and I don't see any chance to become unsold.

I am delighted to have this opportunity to speak to you this morning, and I hope we will have many more opportunities to talk these matters over again.

THE CORRECTION OF PHYSICAL DEFECTS OF PRE-SCHOOL AND SCHOOL CHILDREN IN A RURAL SCHOOL.*

J. H. JANNEY, M. D.,

INDIANOLA, MISS.

The public health worker is attempting to prevent unnecessary sickness and death, to preserve health and to promote physical fitness. He is chiefly concerned with those of his clientele who fall in the pre-school and school groups. His reasons for emphasizing the importance of work among these groups are sound and based on the desire to reduce school absences from preventable sickness, to keep the child physically fit to absorb the knowledge to which he is exposed, and to give him a sound body for the efficient use of the education he has gained. Work of this sort is simply justified by the single consideration of the cost of raising and educating a child to the age of self support.

In a general way work among children falls into three classes, first, protection

against communicable diseases; second, discovery and correction of physical defects; and third, instruction in personal hygiene and simple sanitation.

I shall attempt to discuss physical defects only, with particular emphasis on those of the nose and throat.

Abnormalities of eyes, nose, throat, teeth and nutrition, while perhaps not of greatest importance per se, are extremely dangerous in that they may, if let go on, influence disastrously the general physical welfare of the individual. They result in the lowering of resistance to infections such as tuberculosis and rheumatism, and they often predispose to organic conditions in later life such as heart, kidney and digestive diseases and even nervous and mental disorders.

These predisposing abnormalities put in their appearance chiefly during the pre-school and school periods of the individual's life. The earlier the correction, the easier it is accomplished and the greater the chance of avoiding irreparable damage.

Before a defect can be corrected, it must be discovered. This discovery may be made by the parent, the family physician, the teacher or through medical inspections conducted by the health department. The effort expended in discovering the defect and the discovery itself are absolutely useless if nothing further is done. Health Departments, in their mad desire to show startling statistics on the number of children inspected, at times lose sight of the object of medical inspections, which, after all, is the correction of defects. It is satisfying to point with pride to the fact that 90 per cent of your school children have been examined and perhaps justly so, because, after all, it means a great expenditure of energy and time. Should, however, we deign to become slightly introspective or even doubtful, we will realize that our task is only one-third accomplished and then perhaps our satisfaction will be short lived. Is it not more practical to base our pride entirely on the number of corrections we obtain rather than on any of the other

*Read before the Section on Hygiene and Public Health, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

phases of this important activity? Do not misunderstand me and allow me to create the impression that the discovery of defects is unimportant; on the contrary, it is an essential and extremely necessary part of the program, but insufficient for the attainment of our objective. It must be followed by salesmanship employing every art of the profession. In spite of its unquestionable economic value, the selling of a correction to a parent is not always the easiest task in the world. We have a system and the machinery for convincing parents as to the importance of corrections; but with our notices, letters and home visits, we are indeed fortunate if we get more than 10 per cent of the defects corrected.

The Health Department, when it discovers defects and convinces the parents that they should be corrected, finds its progress toward the accomplishment of its objectives in all this work suddenly blocked unless it has set up the machinery with which to make the correction. Many of us find this "setting up" difficult on account of local facilities and conditions. Few Southern counties are so fortunate as to have a hospital within their boundaries. Many do not even have an eye, ear, nose and throat man equipped to take care for more than a fraction of the work which the average school medical inspection will send his way. The transportation of patients to hospitals, clinics or specialists in other centers is costly and does not get enough corrections done to satisfactorily solve the problem. Some counties import specialists who spend one or two days in the county and perhaps do 20 to 50 tonsillectomies. This procedure is again costly, likely to be fraught with danger, and is scarcely ever a drop in the bucket.

I am indeed sorry that I cannot present to you some marvelous new plan for settling these difficulties. I can only say that each county health officer must work out his own salvation in accordance with his local conditions. In addition, I must take this opportunity of urging upon you the necessity of a hospital in practically every

county. The establishment of such hospitals is without doubt of great interest to the public health worker and certainly a step toward meeting the problem of rural medical care which is menacing our future welfare.

Unfortunately, setting up the machinery for the actual correction does not entirely resolve the situation. The next problem that confronts us is that of cost.

Some children will be able to pay the regular fee, more will be able to pay something, and the rest, a goodly number, must be classed as indigent. I believe that poverty is no more the clinician's responsibility than it is the butcher's, the baker's, or the candlestick maker's. Surely he does enough charity without our expecting him to make corrections in some or all of our defective school children without charge. In spite of the fact that this is a community responsibility and should be handled as such, we usually experience little difficulty in finding someone who will do our indigent work without remuneration. Again it is up to each of us to make the best of our facilities. In many localities, specialists charge a full fee or nothing and are most co-operative in their work. However, many cases require hospitalization which must be paid for regardless of the patient's economic status. Such fees are at times paid from county funds or by local organizations, and some health departments administer funds donated locally for this purpose.

Sound judgment and honesty are essential qualifications of a good health officer. They are incompatible with the spectacular and relatively unimportant activities in county health work. The securing of corrections is time consuming, laborious, discouraging, and not particularly spectacular. Each of us should realize that it is one of the most important of our activities.

We must devote much time and energy toward the pre-school child, and we must work out our own individual salvation as far as actual correction and cost of correction are concerned.

CASE REPORTS AND CLINICAL SUGGESTIONS

AN INTERESTING EXPERIENCE IN TONSILLECTOMY.*

J. L. SCALES, M. D.,
SHREVEPORT, LA.

I presume that by common consent of the men who specialize in nose and throat work it will be agreed that the tonsil question has been worn threadbare; that each has had all the interesting experiences that can occur in tonsillectomy and that none are likely to enthuse over the recital of any other individual's experience in this line. Notwithstanding all this assumed indifference, I venture briefly to report a case, or series of cases, from which I received a considerable degree of pleasure and satisfaction.



THE THREE MISSES F.

The subject matter of this paper has nothing to do with diagnosis, surgical technic or post operative results; it might be said to deal mainly with the matter of human interest—I feel inclined to regard it in the light of the romance of tonsillectomy, if there be any—and I trust it is not inappropriate to go on record in the proceedings of the Louisiana State Medical Society.

On May 5, 1919, I performed a tonsillectomy on three little girls, sisters and triplets, about 7 years of age. There were no complications and no unusual features other than the following:

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

It is not every day that one finds three children of one family that need a tonsillectomy at the same time; still less frequently of the same sex, three girls let us say, and still more rare indeed that triplets are discovered demanding this procedure. I will admit that it would have required rare self control to pass up one of this trio, but I carry an easy conscience in this regard, because the operation was imperative in each instance.

An interesting sidelight grows out of the fact that after the operation I could not tell "tother from which," because of their similarity in appearance. I am told that it taxes the mother's resources to do so.

They are getting to be handsome and attractive young women now and their future seems to be assured in as much as they have run the gauntlet of children's diseases, survived the efforts of the tonsil surgeon and had at least one experience like the following, which was vouched for as being authentic: When they were little babies just beginning to walk the mother, who was gathering flowers in the yard one morning, had her attention drawn to the house by some unusual sound, looked up in time to see one of the babies tumbling out of a second-story window, she ran over in time to catch the baby unharmed in her apron.

Having had some personal experience in raising twins I am prepared to believe that it requires some such maternal, intellectual and physical activity to successfully raise triplets.

DISCUSSION.

Dr. J. T. Crebbin (Shreveport): It is rather interesting, in view of his experience in this case, that the essayist should be the father of twins, and that he should have selected a twin to open his discussion. I do not wonder that he has a special feeling for triplets. His whole experience with this family, including the episode of falling out of the window, is so unusual that, if we did not know his reputation, we might question his veracity. I have had no similar experiences. The nearest I came to it was when I operated on four children of the same family.

A TONSIL EVERSOR.

OSCAR W. BETHEA, M. D.,

NEW ORLEANS.

The tonsils are now recognized as playing such an important role in the etiology of many pathological processes that an investigation of these structures has become an essential part of every routine examination.

Among the many facts that have been established are:

1. That merely depressing the tongue and looking at the tonsils gives a very imperfect idea of their actual condition.

2. That in the majority of instances if pressure is made backward and outward upon the anterior pillar of the fauces the tonsil will be forced inward and forward, the crypts opened up, secretion from the deeper pockets forced out and the whole structure made easily available for inspection or treatment.

For this purpose examiners have used such devices as a cotton mop, the edge of a

laryngeal mirror or a second tongue depressor.

The instrument here illustrated has the following advantages:

It is light, cheap and easily sterilized.

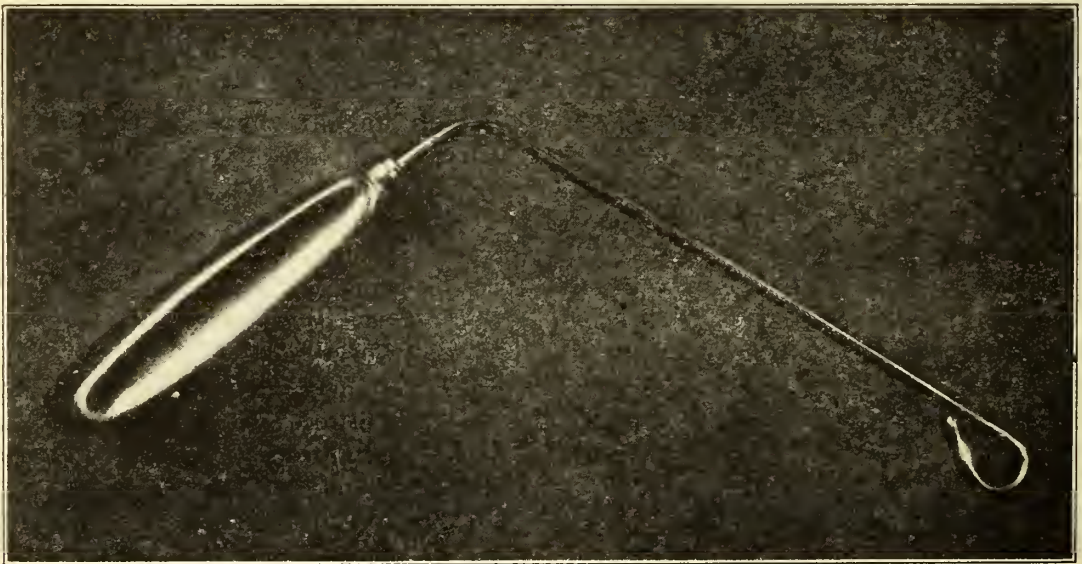
It has a handle of the proper size and shape to serve the convenience of the examiner.

The shaft of the instrument is at such an angle to the handle that the hand of the operator is out of his line of vision.

The smooth polished loop that is used for making the pressure is of such character as to prevent damage to the soft structure or discomfort to the patient.

The procedure is more effective if a tongue depressor such as the Weeder is employed.

Acknowledgments are made to Mr. R. E. Amoss, of the Frank S. Betz Company, for his cheerful cooperation in this, as in other instances in the past where service was possible.



Tonsil Eversor

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ICTERUS NEONATORUM.

Very frequently obstetricians draw a distinction between the child that shows frank jaundice and the one in whom this symptom is absent. Goldbloom and Gottlieb* show in some recent work that no such distinction can be drawn, and that every child has a certain amount of icterus shortly after birth. Icterus neonatorum has been recognized as an entity for a number of years. Virchow, in 1847, wrote that it was due to excessive destruction of the red blood corpuscles. Later he abandoned his view and for at least the last sixty years, the idea prevailed that the

condition is due to a blocking of the small ducts of the liver. With the present day increase of knowledge of the formation of bile which was held back so many years by the erroneous experiments of Minkowski and Naunyn in 1866, it is now known that bile may be formed outside of the liver itself. In view of our increasing information of the importance of the reticulo-endothelial system in bilirubin metabolism, an investigation of the blood of the new born child is particularly pertinent. In this study of blood from the primitive circulation and from the cord, a definite explanation for the icterus of the new born baby is brought forth. In the first place, testing the blood of the umbilical cord, it was found that every child had an increased amount of bile pigment in the blood serum, and estimating the amount quantitative by the icterus index it was shown that those children with more than fifteen units showed frank jaundice. The fragility of the red cells from the cord is markedly increased, so much so that at times there were spontaneous hemolysis of cord blood. The hemolysis of the red cells was most pronounced in the younger forms of these cells.

These observations definitely indicate the hemolytic origin of the jaundice. Why the new born child should have an increased fragility of his red cells is explained on the basis of the infant in utero living continuously in a condition of oxygen want. Their living in an atmosphere lacking oxygen is comparable to man living at high altitudes. As a result of the anoxemia, polycythemia develops. The bone marrow is stimulated by the CO₂ and a great number of immature red cells are thrown into the circulation. When the necessity for the polycythemia ceases as the child is able to breathe, the excess of red cells is destroyed and this destruction manifests itself then in the presence of icterus. Summed up it may be said that

*Goldbloom, Alton and Gottlieb, Rudolph: American Journal Diseases of Children, 38:57, 1929.

icterus neonatorum is invariably present in the new born baby, and that jaundice is due to a post-natal readjustment from an environment of oxygen want to a normal atmosphere.

THE NEW PHARMACOPOEIA.

Considerable discussion was occasioned after the completion of the last Pharmacopoeia as to the advisability of deleting as many drugs as were cut out by the ninth decennial revision. In order to answer the question of the frequency with which certain drugs are used which are not now listed in the Pharmacopoeia, but not to determine the pharmacologic action of these preparations, the Chairman of the Committee on Revision announces that a questionnaire has been prepared containing a list of the large number of drugs omitted from U. S. P. VIII and IX. Physicians, who are interested in seeing that drugs which they consider of value or that certain preparations of drugs be incorporated in the Pharmacopoeia, are requested to write to E. Fullerton Cook, Chairman of the Committee on Revision, at 636 South Franklin Square, Philadelphia, Pa. The questionnaire will be sent to those physicians who would like to have additions or changes made to the Pharmacopoeia, the only proviso being that if the questionnaire is filled out that each and every omitted article, making up roughly a total of some three hundred and fifty drugs or pharmaceutical preparations, be marked either as being used "often" or "rarely" or "never" by the physician signing the slip.

This investigation of the Pharmacopoeia Committee seems eminently fair and just. Certainly the average practitioner of medicine should be given the opportunity of expressing his opinion, if he cares to, concerning the availability of the deleted drugs as a whole or of any drug which he feels has unjustly been removed from this, the official, book of standard for drugs.

ORLEANS PARISH MEDICAL SOCIETY.

A most delightful and entertaining program was presented at the recent Annual Installation Meeting of the Orleans Parish Medical Society. A very enlightening address on "The Doctor in Court," which should have been of interest to every physician, was delivered by Mr. William A. Porteous, Jr. The Incoming President, Dr. C. Grenes Cole, also prepared an address which would have been good for any medical man to hear. The Retiring President, Dr. E. D. Fenner, spoke with his usual felicity and vigor. Following this program refreshments were served and dancing was enjoyed. A month before this meeting, one of the most interesting and able addresses delivered in recent years before the Society was given by Dr. W. C. Rappleye as fourth Chaille Memorial lecturer. This was an address which gave an immense amount of information, which was authoritative and which was well planned and carefully thought out. Here were two unusual medical events under the auspices of the Orleans Parish Medical Society with a membership of 515; here were two meetings which were attractive not only to the medical profession as a whole but to the laity as well; here were two meeting which should have been attended by the great bulk of the members of the Society, and yet at both these meetings there was a mere handful of doctors and even fewer non-professional guests. What is the explanation for this lack of interest in the meetings of the organization? Exactly the same thing is seen at the scientific meetings. A few of the old regulars attended, but very few. It might be that the scientific meetings may not be of general interest, yet at the two especial meetings mentioned above everything that could be done to attract the members was attended to: good speakers were on hand, ample and excellent refreshments were provided, as well as other side attractions,

and yet the attendance was disgracefully small. Lack of interest in the organization does not bode well for the future. Certainly something should be done to stimulate attendance, to arouse enthusiasm, and to urge the members to come to the meetings, meetings which in the past year have been splendid scientific events, meetings which have been of interest from

the social and sociological standpoint, and meetings of which there could be no criticism.

One of the primary purposes of the new Board of Directors, it would seem, would be to devise ways and means whereby greater interest might be aroused in the doings of organized medicine in this the largest Parish Society of the State.

HOSPITAL STAFF TRANSACTIONS

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL.

Staff Meeting, January 10, 1930.

Abstract: Nephrolithiasis with Suppurative Pyelitis.—Dr. A. Street.

Patient—White, female, aged 36 years, married, has two children, youngest eight years old. Admitted to hospital October 23, 1929.

Present Illness—Onset five days ago; abdominal pain in right lower quadrant, with nausea and vomiting. Pain has persisted, requiring morphin each day. Bladder frequency and tenesmus. Chills and irregular fever. Bowels open by cathartics.

Past History and Family History—Not remarkable.

Procedure—Cystoscopy on October 24, 1929. Catheter easily passed into right kidney pelvis and 20 cc. of turbid urine aspirated. From catheter passed into left side there was normal flow of clear urine. Phthalein test showed 5 per cent on right and 35 per cent on left in 30 minutes; dye appeared in eight minutes on right and in five minutes on left. Roentgenogram showed a calculus in the right kidney, forming a cast of the pelvis.

Blood urea nitrogen, 17.5 mg. per 100 cc.; leukocytes, 11,500; neutrophils, 79 per cent. Urine from left side was normal.

Catheter was left in right pelvis for three days, irrigating with three cc. of normal salt solution every four hours. Thereafter catheterization of right ureter at intervals until December 5, when patient was readmitted for operation.

On readmission, patient was feeling well, was free of fever and of all symptoms. Blood urea nitrogen was 15.5 mg. per 100 cc. Dye test

showed 20 per cent excreted by right side in 30 minutes; urine from right ureter was only slightly cloudy, but it still showed pus. Roentgenogram showed the calculus as before.

On December 9, through a right lumbar incision, the kidney was delivered, the posterior surface of the pelvis incised, close to and parallel to the kidney. The stone was removed in two fragments. Fluoroscopy of the delivered kidney then showed it free of shadows. The pelvis was closed and fat sewed over the wound in the pelvis. After the kidney was replaced, nephropexy was done and wound closed to exit of one cigarette drain leading to the perirenal space.

Patient was discharged on December 27, with instructions to return in three weeks for lavage of the kidney pelvis. This will be repeated until the urine is free of pus.

Abstract: Vague Abdominal Symptoms Due to *Uncinaria Americana*.—Dr. J. A. K. Birchett, Jr.

Patient—White, female, aged 16 years, school-girl.

Chief Complaint—Pain in upper right side of abdomen for past four or five months; no appetite; no energy.

Past History—For past year has been having vague pains, mostly in abdomen and in small of back. Was told pains were due to absorption from tonsils which she had removed without improvement. Pains became so cramp-like and uncomfortable that she consulted another physician, who diagnosed the condition as chronic appendicitis and removed the appendix. No improvement in abdominal symptoms followed.

Began menstruating at 14 years of age; menstruation lasts three days; no dysmenorrhea. Bowels constipated. Anorexia. No serious ill-

nesses. Bronchitis last winter. Malaria two years ago.

Family History—Not remarkable. No tuberculosis; no cancer.

Physical Examination—Well nourished and developed. Oral hygiene good; tongue clean; teeth perfect. Tonsils partially out; no inflammatory changes. No enlargement of thyroid. Heart and lungs negative. Tenderness was elicited over gall-bladder and duodenal regions. Liver not enlarged; spleen negative. There was well healed recent mid-line abdominal scar of previous operation. Some vague pain elicited over both costo-vertebral angles. Pelvic examination showed small uterus, retroverted; tubes and ovaries negative. Reflexes normal. Skin had yellowish tint, appearance of anemia.

Subsequent—No diagnosis was made but the evidence of vague abdominal pain, cramping in region of gall-bladder, anemia, and pronounced lassitude suggested examination of stool for parasites, and especially for hookworm as it has been brought out in the literature that the presence of these parasites will bring about an anti-peristaltic wave in the duodenum, which gives cramps and discomfort in that region. The feces showed an abundance of *uncinaria Americana* ova.

The patient was given carbon tetrachlorid at two different times and is improving. The ova have disappeared from the stools. An interesting point in this case was that at the first few blood examinations no eosinophils were found. At the last examination of the blood, after the second dose of carbon tetrachlorid and when no ova could be demonstrated in the stools, the eosinophils were 18 per cent.

TRANSACTIONS OF THE CHARITY HOSPITAL SURGICAL STAFF.

The chairman, Dr. A. C. King, has inaugurated a system of presenting one or two speakers for short talks preceding each regular meeting. In accordance with this policy Dr. Urban Maes read a short paper on "The Preoperative Preparation of Patients." A number of important and interesting points were stressed and it was thought best to publish this paper in its entirety.

Dr. Peter Graffagnino next gave a very interesting talk on intravenous amytal anesthesia. He reviewed the literature and found that the idea was not altogether new, nor is this the first time this particular drug had been used intravenously. It was shown that various drugs, including ether, at various times were tried and each given up in turn.

The speaker explained that the drug, amytal, had been used by him or under his supervision, about 33 times. He stated that the dose for man is from 10 to 25 grains dissolved in triple distilled water to make a 10 per cent solution, and he reviewed the technic of preparation stating that the solution should be perfectly clear. He added that the drug must be given very slowly, about 1 cc. per minute, the patient falling into a deep natural sleep within three to five minutes. Depending on his age, size, and susceptibility of the patient, and the amount of the drug used sleep is produced from one to four hours. However, many patients sleep for twenty-four hours or even three days. It was also said that the anesthetic period is not more than three hours at most.

In his concluding remarks Dr. Graffagnino was very cautious. He explained that while this was the ideal way of anesthesia still a number of facts must be overcome. The obstetrical use of this drug has one particular disadvantage in that the patients are as a rule very restless during the progress of labor. This makes close watching of the patient very important. This restlessness is also noted in some surgical cases, and particularly after they are returned to their beds, frequently necessitating the use of arm and leg straps. The danger in this is readily appreciated. No minimal lethal dose is as yet known for man and the ever present possibility of idiosyncrasy to the drug cannot be totally ignored. As yet no antidotes are known, so that the matter of idiosyncrasy is of great importance. Once put into circulation, how are we to increase its elimination or inactivate it should trouble arise?

The drug given in this manner has been found very useful in strychnine poisoning, tetanus, and eclamptic convulsions. From this point of view it is certainly an important addition to our armamentarium. However, before using it as a routine anesthetic many problems must yet be overcome.

A discussion of the deaths occurring in the surgical services next followed. The first case presented was that of a white infant 8 months of age who died following a bilateral mastoidectomy. Dr. Dupuy, Sr., discussed this case, explaining that at this age as a rule only the antrum is present.

The next case was that of a white female, 29 years of age, who died of a general peritonitis following the exploration of an appendiceal abscess which complicated pregnancy. Many points of intense interest were brought out particularly the matter of being conservative in the treatment of these cases.

FRANK L. LORIA, M. D.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR.

- February 3. Eye, Ear, Nose and Throat Hospital Staff, 8 P. M.
- February 7. Physiology Seminar, Tulane Medical School, 5 P. M.
- February 10. *Orleans Parish Medical Society.* Joint Meeting of the Orleans Parish Medical Society with the New Orleans Gynecological Society, 8 P. M.
- February 11. Baptist Hospital Staff, 8 P. M.
- February 12. Touro Infirmary Staff, 8 P. M.
- February 14. Physiology Seminar, Tulane Medical School, 5 P. M.
- February 14. Medical Reserve Corps Branch School, 8 P. M.
- February 17. Hotel Dieu Staff, 8 P. M.
- February 18. Charity Hospital Medical Section, 8 P. M.
- February 19. Charity Hospital Surgical Section, 8 P. M.
- February 20. I. C. R. R. Hospital Staff, 12 Noon.
- February 20. Eye, Ear, Nose and Throat Club, 8 P. M.
- February 21. Physiology Seminar, Tulane Medical School, 5 P. M.
- February 24. *Orleans Parish Medical Society,* 8 P. M.
- February 28. Physiology Seminar, Tulane Medical School, 5 P. M.
- February 28. Medical Reserve Corps Branch School, 8 P. M.

SECRETARY'S REPORT.

During the month of January the Society held two meetings. January 13 the annual Installation Meeting was held. This meeting was fairly well attended. The reading of the annual reports of the Secretary, Treasurer, Librarian and of the various committees was referred to the next meeting. The only addresses of the evening were the retiring address of the President, Dr. E. D. Fenner, the annual address of the incoming President, Dr. C. Grenes Cole and the annual oration, "The Doctor in Court," by Mr. William A. Porteous, Jr. All addresses were very interesting. The installation of the following Officers for 1930 took place:

President—Dr. C. Grenes Cole.
 First Vice-President—Dr. Emmett Irwin.
 Second Vice-President—Dr. James T. Nix.
 Third Vice-President—Dr. Walter J. Otis.
 Secretary—Dr. H. Theodore Simon.
 Treasurer—Dr. John A. Lanford.
 Librarian—Dr. Daniel N. Silverman.

ADDITIONAL MEMBERS BOARD OF DIRECTORS.

Dr. Erasmus D. Fenner.
 Dr. I. M. Gage.
 Dr. Louis Levy.

Following the meeting refreshments were served in the green room.

At the scientific meeting held Monday, January 27, the program was as follows:

Some Observations on Simple Blood Smear Agglutination Tests in Tularemia, Typhus and Undulant Fever. A Preliminary Report.

By.....Dr. Seab J. Lewis
 Discussed by Dr. F. M. Johns

A Demonstration of Retrograde Esophageal Bougienage.

By.....Dr. H. L. Kearney
 Discussed by Dr. Lucian Landry

The Home Treatment of Pulmonary Tuberculosis.

By.....Dr. D. L. Watson
 Discussed by Dr. Emile Bertucci

This meeting was well attended. At this meeting the annual reports of the Secretary, Treasurer, Librarian and committees were read.

The following resolutions were adopted:

Whereas, by the Will of God, our Confrere, Dr. Charles V. Unsworth, was taken from among us by Death:

Therefore, be it resolved, That this Society desires to express to the family of Dr. Unsworth its regrets and sincere sympathy in its bereavement.

Be it further resolved, That these resolutions be adopted and that they be spread upon the minutes, and also that a copy be sent to the family of the deceased.

A final request for pictures to be placed in the History of the Orleans Parish Medical Society now being written by Dr. Fossier has been made. This book is now on the press, the only delay will be the making of cuts for the pictures.

TREASURER'S REPORT.

Actual Book Balance: 11/30/29.....	\$ 392.42
Receipts	\$4,966.75

Expenditures	\$5,359.17
	\$3,621.68

Actual Book Balance 12/31/29.....	\$1,737.47
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H. THEODORE SIMON, M. D.,
 Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

The following Parish Medical Societies have elected officers for 1930:

East Baton Rouge Parish: President, Dr. H. W. A. Lee, Baton Rouge; Vice-President, Dr. A. L. East, Baton Rouge; Secretary-Treasurer, Dr. Edw. K. Hirsch, Baton Rouge; Delegates, Dr. R. G. McMahon, Dr. Cecil Lorio, Dr. Lester J. Williams, all of Baton Rouge; Alternates, Dr. Jeff McHugh, Dr. L. F. Lorio, Dr. Sidney D. Porter, all of Baton Rouge.

Franklin Parish: President, Dr. C. D. Powell, Crowville; Vice-President, Dr. L. F. Robinson, Winnsboro; Secretary-Treasurer, Dr. A. J. Reynolds, Winnsboro; Delegate, Dr. J. D. Rogers, Winnsboro; Alternate, Dr. R. E. King, Winnsboro.

Iberia Parish: President, Dr. Guy A. Shaw, Loreauville; Secretary-Treasurer, Dr. P. A. Boykin, Jeanerette; Delegate, Dr. Guy A. Shaw, Loreauville.

Morehouse Parish: President, Dr. R. B. Leavell, Bastrop; Vice-President, Dr. M. W. Owens, Bonita; Secretary-Treasurer, Dr. O. M. Patterson, Bastrop; Delegate, Dr. L. E. Larche, Bastrop.

Ouachita Parish: President, Dr. E. R. Yancey, Monroe; Vice-President, Dr. Wm. L. Bendel, Monroe; Secretary-Treasurer, Dr. Irma S. Jones, Monroe; Delegates, Dr. C. P. Gray and Dr. R. W. O'Donnell, both of Monroe; Alternates, Dr. J. H. Pankey and Dr. B. M. McKoin, both of Monroe.

Pointe Coupee Parish: President, Dr. J. O. St. Dizier, Walls; Vice-President, Dr. J. F. Caza-youx, New Roads; Secretary-Treasurer, Dr. F. F. Rougon, New Roads; Delegate, Dr. R. McG. Caruth, New Roads; Alternate, Dr. J. O. St. Dizier, Walls.

Vernon Parish: Dr. J. S. Branch, Leesville; Vice-President; Dr. A. S. Reisor, Leesville; Secretary-Treasurer, Dr. D. O. Willis, Leesville; Delegate, Dr. F. P. Jones, Leesville; Alternate, Dr. D. O. Willis, Leesville.

The Seventh District Medical Society met in Oakdale, Louisiana, December 12, 1929. The meeting and papers were enjoyed by a large number of members and visitors. The program was as follows:

Treatment of Vomiting of Pregnancy and Eclampsia, by Dr. John T. Sanders, New Orleans. Uses and Effects of Radium in Conditions of the Cervix and Uterus, by Dr. William L. Bendel, Monroe. A Subject of Vital Importance to all Ex-Service Men, by Lieut. Linden Dalfers, New Orleans.

R. S. KRAMER, M. D., Secretary,
Jennings, La.

At the regular meeting of the LaSalle Parish Medical Society, January 2, 1930, the following officers were elected to serve current year:

President, Dr. C. W. Patterson, Tullos (re-elected); Vice-President, Dr. Thos. M. Butler, Trout; Secretary-Treasurer, Dr. W. V. Taylor, Olla (re-elected); Delegate, Dr. W. V. Taylor, Olla; Alternate, Dr. H. S. Holloman, Standard.

MEETING AND ANNUAL BANQUET OF ST. TAMMANY PARISH MEDICAL SOCIETY.

The Society met at the New Southern Hotel, Covington, at 8 P. M., Friday night, January 10.

The members were honored by the presence of three prominent New Orleans physicians—Drs. Vidrine, Jules Dupuy and M. O. Miller. Dr. Felix Plauché, interne in Charity Hospital and of Covington, was another of the guests.

After the regular order of business and preceding the installation of officers, the outgoing president, Roland Young, gave a short accounting of his stewardship and urged that the members participate more in the scientific programs. He expressed his desire that the St. Tammany Parish Medical Society entertain the Sixth District Medical Society at its next fall meeting, stating the society should do so; the time was ripe and Covington would be greatly benefited by it. It was moved and carried that this be given serious consideration and be decided upon at the February meeting.

Dr. Stevenson as acting president then welcomed Dr. Gautreaux as the new president. Dr. Gautreaux on assuming the chair reviewed a little of the society's history and stated that it was the most active of the parish societies.

The doctors then adjourned and retired to the dining room and feasted to a grand spread of Lorré's of the Southern Hotel. The banquet was interspersed by talks of much interest especially by the visiting doctors.

A most delightful feature of the evening was a dance and musicale by Miss Muriel and Byron Gautreaux, son and daughter of Dr. H. E. Gautreaux.

L. ROLAND YOUNG, M. D.

Resolution of respect in regard to the death of the late Dr. R. L. Credille, who died on November 27, 1929:

Whereas, it has pleased Almighty God to take from our midst our beloved brother and friend, Dr. R. L. Credille, who was a member of the Morehouse Parish Medical Society.

We are all grieved at his passing but we know that our Almighty God and Creator of the universe never makes any mistakes.

In his death the entire parish has lost one of its most useful, valued and prominent citizens whose place will never be filled; and this society has lost a most valued member and one of the

most outspoken doctors and physicians in this section of the State.

Dr. Credille was a well known citizen of Morehouse Parish, having practiced in this parish for the past thirty years, and was not only one of the best physicians in this section of the state, but was honest, upright and a Christian gentleman throughout his life and in all his dealings, and respected and loved by everyone and especially by all the members of our profession.

We extend to his family and relatives our heartfelt sympathy.

Therefore, be it resolved, That this resolution be spread upon the minutes of our society, a copy hereof sent to the family, and a copy sent to the press.

Respectfully,

O. M. PATTERSON, Chairman.
L. E. LARCHE,
W. A. ROGERS,

Resolution Committee.

WEEKLY HEALTH INDEX.

During the week of December 21, 1929, there was a total of 161 deaths in the City of New Orleans. Sixteen of those who died were under the age of 1. The death rate during this particular week was 19.6 as contrasted with 26.3 one year ago. In the last week of the year the death rate jumped up considerably, possibly as a result of the extremely cold weather. There were 204 deaths in the city of which 21 were infants. The death rate was 24.8 as contrasted with 36.3 the corresponding week of 1928. In the first week of the new year the death rate was 23.2 with a total of 191 deaths, of which 14 were in infants under 1 year of age. The death rate this particular week of 1929 was 40.1. In this particular week there were 329 deaths. The death rate fell somewhat during the course of the last week of which we have recorded, namely, the week of January 11. There were 173 deaths, 22 of which were in children under 1 year of age. The death rate itself was 21, incidentally a higher rate than in any other city in other states of which weekly death rates are reported. However, it was a decided improvement over the previous year, when there were 266 deaths with a death rate of 32.3.

TOTAL OF 52 WEEKS IN 1929.

During the year 1929 there were 8,043 deaths in the City of New Orleans, 748 of which were in small infants. The death rate for the year was 18.8, figures which are extremely high, although Memphis with a death rate of 20.2 had a still higher death rate. Incidentally these figures are some improvement over the previous year when there were 8,242 deaths with a rate of 19.2.

NEWS AND COMMENTS.

ALABAMA MORTALITY STATISTICS.

It may be of some interest to contrast the Alabama mortality statistics with those recently published in the Journal from the State of Louisiana. The death rate in Alabama was 1,237.7 per 100,000 population, somewhat lower than it was in Louisiana. As in this State, the most marked increases in rate were from diseases of the heart, cerebral hemorrhage, nephritis and diabetes mellitus. As with Louisiana, the influenza rate was more than doubled, but unlike her sister state, the death rate from tuberculosis increased somewhat as did the pellagra rate. Accidental causes of death also increased in this state as it did in Louisiana.

INVITATION.

The honor of your presence is respectfully requested at the opening ceremonies of the St. Joseph Hospital, Thibodaux, La., on Sunday, January 19, 1930, at 3:00 o'clock in the afternoon.

His Grace, J. W. Shaw, D. D., Archbishop of New Orleans, will preside at the blessing and dedication.

Executive Committee.

THE COMMONWEALTH FUND.

The Commonwealth Fund announces a plan of co-operation in the State Health Departments to promote rural health. The program was based on three fundamental principles: first, that the state health department should direct, guide and foster rural health activities; second, that the progressive practice of medicine is the foundation of sound health work; third, that to secure maximum results physicians, nurses, teachers, and the official health personnel must join forces. Therefore two related lines for service were planned: first, assistance to state health departments in setting up field supervision for rural health work and in developing adequate local service; and second, assistance to schools of medicine, normal schools, individual physicians, nurses, and teachers to promote special training for rural health service. Space does not permit any elaboration of the plan. Suffice it to say that it is intended to be flexible and experimental. Proposals for co-operative activities under this plan and requests for further information should be addressed to William J. French, M. D., Commonwealth Fund, Fuller Building, Madison Avenue and Fifty-seventh Street, New York.

WOMAN'S AUXILIARY OF THE AMERICAN MEDICAL ASSOCIATION.

This organization has undertaken an official health program, which is quite pretentious in character, to undertake to help, aid and assist in the promotion of public hygiene and the improvement of public hygiene, the latter by education, the former largely through the State Auxiliary.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

CENTRAL MEDICAL SOCIETY.

Dr. W. L. Hughes reports that the annual meeting of the Central Medical Society was held at the Edwards Hotel at Jackson on December 17, 1929. After the annual banquet the following scientific program was presented by visiting essayists:

A Study of the Spinal Fluid As An Aid in the Understanding of Meningitic Symptoms or Meningitis.—Dr. R. C. Bunting, Memphis.

The Treatment of Early and Late Toxemias of Pregnancy.—Dr. Thomas B. Sellers, New Orleans.

These very interesting and instructive papers were the high lights of the meeting and brought forth enthusiastic discussions.

At the business session of the society the following officers were elected for 1930: President, Dr. R. W. Hall, Jackson; Vice-Presidents: from Hinds County—Dr. S. H. McLean, Jackson; from Simpson County—Dr. E. L. Walker, Magee; from Rankin County—Dr. W. H. Watson, Brandon; from Madison County—Dr. J. B. Howell, Canton; from Yazoo County—Dr. Gilruth Darrington, Yazoo City; Secretary, Dr. W. L. Hughes, Jackson; delegates to the Mississippi State Medical Association: from Hinds County—Dr. J. P. Wall, Jackson; from Simpson County—Dr. E. L. Walker, Magee; from Rankin County—Dr. W. H. Watson, Brandon; from Madison County—Dr. C. G. Bell, Canton; from Yazoo County—Dr. C. M. Coker, Eden.

Dr. J. P. Wall of Jackson has been appointed chairman of the publication committee of the society.

Dr. Henry Boswell, Superintendent and Director of the Bureau of Tuberculosis, Mississippi State Sanatorium, has sent the following letter to the physicians of the State:

"Soon after the first of the year we are going to open our Preventorium for the care of undernourished and under-developed white children ranging from four to eleven years of age. The County Health Department in each County will handle the applications for you.

"Should you have a child who has been exposed to tuberculosis who is under developed and you think would be benefitted by coming here, please apply to the County Health Officer for blanks. No active case of tuberculosis will be admitted to the Preventorium."

HOMOCHITTO VALLEY MEDICAL SOCIETY

A meeting of the Homochitto Valley Medical Society was held on January 9, at Centreville, the society being the guests of Drs. Richard J. Field and Samuel E. Field at the Field Memorial Hospital.

Dr. Urban Maes of New Orleans, and Dr. Henry Boswell of Sanatorium were the principal speakers.

FROM OUR SECRETARY.

To Mississippi Doctors:

This is to again call your attention to the increased dues of the State Association. At the meeting of the House of Delegates in Gulfport in May, 1929, the dues were increased from three to four dollars, this having been found necessary in order to meet the expenses of the Association and to provide a safe margin for future emergencies.

These dues were due and payable to your local secretary on or before January the first. The By-laws provide the following for county Secretaries:

"The Secretary of each county Society shall forward its assessment, together with its roster of all officers and members, list of delegates, and list of non-affiliated physicians of the county, to the Secretary of the Association by February 1st.

"Any county society which fails to pay its assessment or make the reports required on or before the date above stated, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business proceedings of the Association or of the House of Delegates until such requirements have been met."

Cordially yours,

T. M. DYE, Secretary.

Dr. V. B. Martin, Surgeon in charge, of the Martin Sanatorium at Picayune, is very much in need of a young physician to assist him in his work. He would prefer one with some interne experience and one competent to take out an acute appendix if necessary. Dr. Martin will pay a salary and allow an assistant all of the outside practice he can command. If anyone can help Dr. Martin to get in touch with such a prospect, he will appreciate it very much.

THIRTEEN COUNTIES MEDICAL ASSOCIATION.

Dr. J. M. Acker, Jr., Secretary, reports that the Northeast Mississippi Thirteen Counties Medical Society met in Tupelo, December 10. Dr. Carroll W. Allen, New Orleans, guest essayist, addressed the Society on, "Abscess of the Lung."

Resolutions were adopted favoring the passage of drastic legislation in regard to the labelling of lye and other caustics for sale.

A banquet was given by the Tupelo doctors to the members of the society in the banquet hall of the Baptist Church.

Officers for 1930 were elected as follows: President, Dr. K. F. McRae; Vice-Presidents: from Alcorn County, Dr. J. R. Lanning; from Calhoun County, Dr. W. J. Aycock; from Chickasaw County, Dr. W. C. Walker; from Clay County, Dr. L. W. Dotson; from Itawamba County, Dr. S. L. Nabors; from Lee County, Dr. W. H. Eason; from Lowndes County, Dr. W. C. Brewer; from Monroe County, Dr. C. B. McCowan; from Noxubee County, Dr. S. F. Hill; from Oktibehha County, Dr. J. E. Eckford; from Pontotoc County, Dr. E. G. Abernathy; from Prentiss County, Dr. R. B. Cunningham; from Tishomingo County, Dr. N. C. Waldrop; Secretary, Dr. James M. Acker, Jr., Aberdeen; Delegates to the Mississippi State Medical Association: from Alcorn County, Dr. M. W. Robinson, Alternate, Dr. R. E. Honnell; from Calhoun County, Dr. E. B. Young, Alternate, Dr. W. J. Aycock; from Chickasaw County, Dr. V. B. Philpot, Alternate, Dr. E. G. Armstrong; from Clay County, Dr. A. K. Naugle, Alternate, Dr. S. R. Deans; from Itawamba County, Dr. S. L. Nabors, Alternate, Dr. N. W. Nanney; from Lee County, Dr. Roy Caruth, Alternate, Dr. J. H. Green; from Lowndes County, Dr. E. Q. Withers, Alternate, Dr. P. L. Fite; from Monroe County, Dr. J. M. Acker, Jr., Alternate, Dr. E. Q. Ewing; from Noxubee County, Dr. J. D. Green, Alternate, Dr. C. W. Salter; from Oktibehha County, Dr. C. R. Dabbs, Alternate, Dr. F. B. Long; from Pontotoc County, Dr. R. P. Donaldson, Alternate, Dr. A. P. Dunavant; from Prentiss County, Dr. W. H. Anderson, Alternate, Dr. L. L. McDougall; from Tishomingo County, Dr. N. C. Waldrop, Alternate, Dr. A. E. Bostick.

Medico Legal Committee elected for one year, Drs. G. S. Bryan, H. L. Scales and W. C. Walker.

Credentials Committee elected for one year, Drs. V. B. Philpot, W. J. Aycock and S. L. Stephenson.

The next meeting of the Society will be held at Booneville on the third Tuesday in March.

THE DESOTO COUNTY MEDICAL SOCIETY.

Dr. L. L. Minor, Secretary, reports that the Desoto County Medical Society met in regular session on January 6. Dr. Charles Whitley Emerson, of Hernando, was elected President for the coming year; Dr. A. V. Richmond, Lake Cormorant, Vice-President; Dr. L. L. Minor, Memphis, Secretary and Treasurer; Dr. A. L. Emerson, Hernando, member of the Board of Censors for three years.

The next meeting of the Society will be held on the first Monday in April, when a plate dinner will be given in honor of its oldest member, Dr. W. S. Weissinger, Hernando. Dr. Weissinger wore the grey of a Confederate Soldier. His health is excellent.

Dr. J. M. Wright, Hernando, has been forced to relinquish his practice temporarily on account of bad health.

Dr. A. A. Sparkman, Lake Cormorant, who was sick during the fall, is now in excellent health.

THE CRAWFORD CLINIC.

Dr. Walter W. Crawford has announced the opening of The Crawford Clinic at the South Mississippi Infirmary, Hattiesburg. The Staff includes, Dr. Franklin T. Bower, General Medicine and Roentgenology; Dr. Charles C. Buchanan, Eye, Ear, Nose and Throat; Dr. Walter W. Crawford, Surgery, Gynecology and Radium; Dr. John P. Culpepper, Jr., General Medicine; Dr. Joseph E. Green, Pediatrics and Obstetrics; Dr. Altus B. Harvey, Surgery and Urology; Dr. John Paul Jones, Dental Surgery.

The Clinic occupies a new building of sixty rooms and is thoroughly equipped, including complete physiotherapy, hydrotherapy and mechanotherapy departments. The clinic operates in direct connection with the South Mississippi Infirmary.

W. Hamilton Crawford is Director.

RUSH'S INFIRMARY.

The regular monthly Staff Meeting of Rush's Infirmary was held on January 3. The program included the following:

Case Report—Encephalitis Lethargica—Dr. Thomas E. Royals.

Symposium on Spinal Fluid and Conditions Affecting Same.

The Physiology of the Normal Cerebro-spinal Fluid—Dr. H. Lowry Rush.

The Spinal Fluid from the Internist's Point of View—Dr. L. Hart.

The Spinal Fluid from the Surgeon's Point of View—Dr. J. H. Rush.

The Spinal Fluid from the Pathologist's Point of View—Dr. S. R. Stingily.

General Discussion.

Suggestions for improving the service of the Hospital.

Announcement has been made that Dr. G. L. Arrington has returned to Meridian with offices in the Citizens Bank Building. His practice will be limited to pediatrics.

LYE BILL.

"January 3, 1930.

"Dear Mr. Editor:—

"Please tell the members that Senator Culkin of Warren will introduce the Lye Bill early in the session, and that as soon as it reaches the House Dr. J. S. Austin will get behind it. Dr. I. W. Cooper has captured the interest of Mr. Bailey, the speaker of the House, for it and he has promised his assistance.

"About the time that this reaches the members of the Association everything will be ripe for their help. If they will busy themselves with their representatives, we can put it over.

"Yours,

"The Committee on Lye Legislation,
"By E. F. HOWARD."

Acknowledgement is made of the receipt of the report of the Warren County Health Department for the period October 1, 1927 to June 30, 1929. The report, which covers the twenty-one months from the organization of the department, shows that a well rounded program is being followed and much good has been accomplished. Dr. F. Michael Smith is Director.

VICKSBURG SANITARIUM.

The Regular Monthly Meeting of the Staff of the Vicksburg Sanitarium and Crawford Street Hospital was held on January 10.

Special case reports presented:

Conservative Treatment of Eclampsia (two cases)—Dr. G. M. Street.

Nephrolithiasis with Suppurative Pyelitis—Dr. A. Street.

Vague Abdominal Symptoms Due to Uncinaria Americana—Dr. J. A. K. Birchett, Jr.

Pseudo Angina—Dr. L. J. Clark.

Selected Radiographic Studies were demonstrated as follows:

Fracture-dislocation of ankle; Fracture-dislocation of elbow; Fracture-dislocation of neck; Fracture of skull; Arthritis of spine; Scoliosis of

Thoracic spine with pulmonary tuberculosis; Enlarged thymus; Carcinoma of the stomach; Cholelithiasis (2 cases).

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held at Vicksburg on January 14. Dr. F. Michael Smith, Vicksburg, presented three reels of motion pictures on the Diagnosis and Treatment of Syphilis.

The committee appointed at the November meeting to investigate the policies of the Health Departments of the Counties of Issaquena, Sharkey, and Warren, made its report, which was followed by a general discussion and brought out the cordial relations existing between the medical profession and the department of health.

The Secretary presented the report for the year of 1929 as follows:

Membership: Regular, 42; Life, 1; Honorary, 3. Total, 46.

Meetings held, 11 (two were joint meetings with the Central Medical Society, one in Jackson, and one in Vicksburg.)

Attendance: Members, 186; average per meeting, 17; visitors, 70; average per meeting, 6. Total attendance for year, 256; average attendance per meeting, 23.

An invitation was received from the Fifth District Medical Society of Louisiana, through its President, Dr. C. L. Mengis, Sterlington, La., to take part in a joint meeting with the Fifth District Society at Monroe, La., some time in June, the Fifth District Society to join the local society for its annual meeting in Vicksburg next December. For the June meeting, the Fifth District Society is to furnish the program, with a clinic in the forenoon, either a barbecue or fish fry in the gas fields near the Louisiana Power Plant, golf or visits to the clubs in the afternoon, with the scientific program after dinner. It was pointed out that by June, the bridge over the Mississippi River should be completed and the road to Monroe paved all of the way. The Society unanimously voted to accept the invitation.

President L. J. Clark appointed as the standing committee on Public Health and Legislation, Doctors F. Michael Smith, Vicksburg; T. W. Huey, Grace; E. B. Stribling, Rolling Fork.

Dr. Mark T. Boyd, in charge of Malaria Control Work for the State Board of Health, ex-

plained a regulation of the State Board of Health creating a special malaria morbidity reporting district, which includes the counties of Issaquena, Sharkey and Warren. The purpose of this regulation is to determine the actual malaria situation in the district and to aid in the eradication of this disease.

Visitors at this meeting included Doctors Felix J. Underwood, C. C. Applewhite, H. C. Ricks, Mark T. Boyd, W. E. Noblin, all of Jackson; W. T. Duke Glen Allen, and R. H. Foster, Mound, La.

The next meeting of the Society will be held February 11. The program will be in charge of a committee composed of Drs. A. K. Barrier, Rolling Fork; M. H. Bell, Vicksburg; J. W. B. Benton, Valley Park; J. A. K. Birchett, Vicksburg, and H. H. Johnston, Vicksburg.

HEALTH CONDITIONS IN WARREN COUNTY.

The following letters, as bearing on health conditions in Warren County, were presented to the Issaquena-Sharkey-Warren Counties Medical Society at its last meeting and were enthusiastically received.

"October 23, 1929.

"Honorable James W. Good,

"Secretary of War,

"Washington, D. C.

"Dear Sirs:

"In the unfortunate controversy that has been waged in the public press relative to the location of the Mississippi River Commission's headquarters that had been officially announced as having been placed at Vicksburg, some reference has been made to health conditions with the inference that Vicksburg would not be as desirable location as other points, etc.

"As director of the Warren County Health Department, city health officer and field agent of the United States Public Health Service, permit me to call your attention to a few facts that have been admirably and truthfully stated in an editorial in the September, 1929, edition of the American Public Health Association and published at 370 Seventh Avenue, New York City. The title of the editorial is 'Leadership in American Public Health,' and we quote in part as follows:

"Leadership in American public health now rests with the Southern States. Not only have they made the greatest progress in recent years in the organization of their public health services, but they seem to show most promise in their

readiness and ability to extend and perfect their organizations to the point of adequacy. The richer and more complacent northern and eastern areas of the country have much to learn from their sister states below Mason and Dixon's line. It is hoped that they will not lose much time in profiting from the admirable lesson. The history of this shifting of leadership to the Southern States is full of interest."

"In a latter paragraph of this editorial it is further stated as follows: 'It is literally true that when health observers from abroad come for the study of our best rural work, it is necessary to take them to such Southern States as Mississippi and Tennessee, rather than to the Northern States where health work has been in operation much longer and where brilliant achievements were recorded in the past. Possibly it would be more charitable to say that health work in most Northern States being older, has reached a more or less static condition in relation to basic needs. But there is little to inspire in this situation.'

"Permit us to say that only a few months ago a delegation from South American countries and some European countries were visitors and observers in the Warren County Health Department of Vicksburg, Mississippi, for the purpose of taking back to their own countries that which impressed them as being good in health work. Some two weeks ago Dr. Fang Yung Li, a graduate of the Medical Department of the University of Peking was sent by the Rockefeller Foundation to this country to study Public Health measures and methods and he spent one week of this time in the Warren County Health Department, Vicksburg, Mississippi, and proceeded from here to Johns Hopkins University in pursuit of further studies.

"Today we have on our desk a communication from the State Health Department advising that Dr. T. A. Pincock, Deputy Minister of the Department of Health and Public Welfare at Winnipeg, Manitoba, expects to arrive in Vicksburg on the morning of October 24, 1929, for an 'observation of the methods and measures used in the Warren County Health Department.'

"These matters are called to your attention without any spirit of arrogance, but to respectfully confirm just what was said by the editor of the American Journal of Public Health in its last publication. Now for a more positive ascertaining of the character of the health work and conditions in this locality, we respectfully ask you to call upon Surgeon L. L. Lumsden, Hygienic Laboratory, Washington, D. C., director of rural sanitation, United States Public Health Service, or upon the Bureau of County Health Work,

State Board of Health, Jackson, Mississippi. If details would be of interest it would be our pleasure to submit same. Though we are impressed that all of this is useless and futile as your department is in full possession of all facts enumerated, you will pardon us for recounting and presenting some. Our only excuse is to counteract a belief that some might hold that silence was an admission that our health department was inefficient and inadequate to meet the needs of our advancing civilization.

Yours very truly,

"F. MICHAEL SMITH, M. D., Health Officer,
"Field Agent, U. S. Public Health Service."

"WAR DEPARTMENT,
"Washington

"E. D. 1105-589 November 2, 1929.

"F. Michael Smith, M. D., Director,
"Warren County Health Department,
"1222 Washington Street,
"Vicksburg, Mississippi.

"Dear Sir:

"Receipt is acknowledged of your letter of October 23rd inviting attention to the excellent health conditions obtaining in and around Vicksburg.

"The extracts you quote therein and the investigations by others of the methods and measures used for the advancement of health protection furnish ample proof that health conditions in Vicksburg are satisfactory.

"Sincerely yours,

"JAMES W. GOOD,
"Secretary of War."

MALARIA CONTROL.

Dr. Felix J. Underwood, Secretary and Executive Officer of the Mississippi State Board of Health, has sent the following letter to the physicians of the Delta Counties:

"The State Board of Health, at a meeting held on December 12, adopted a regulation creating a special malaria morbidity reporting district, which includes your county. A copy of this regulation is enclosed for your information and guidance.

"The data compiled from our existing malaria reports indicates that in the Delta Counties we face a considerable malaria problem. However, the present method of compiling these data leads to the following conclusions:

"(A) That they do not correctly reflect the actual malaria situation in the State, but give rise to exaggerated ideas which work an injury to us, especially apparent to those who view Mississippi from outside.

"(B) That they do not permit us to face the facts nor do they permit the Health Department

to learn the locations where malaria occurs. In order that County Health Departments can effectively deal with the causes of malaria prevalence, it is essential that each case be reported individually and that you carefully and accurately record the place of residence of every case reported, in order that the malarious localities of your county will be revealed to the Health officer.

"(C) That it is highly important that a diagnosis of malaria be restricted to cases of illness undoubtedly caused by the malarial parasite, and that insofar as possible these be verified by blood examination. Outfits for the collection and transmission of blood smears to the laboratory, a sample of which is enclosed, are freely available to you through the County Health Department. Their use will also simplify reporting as described in the regulation.

"Since the State in which we are mutually interested can only deal with this problem effectively by facing the facts, whatever they may be, the State Board of Health earnestly requests your co-operation in enforcing this regulation as it proposes to vigorously promote through the County Health Department, appropriate measures for the control of this disease."

This is certainly a step in the right direction and deserves the active support and co-operation of every physician in the interest of our State.

SOME HIGH LIGHTS IN MISSISSIPPI MEDICAL HISTORY.*

At the Grenada meeting in 1877, for the purpose of benefiting the work of the Association itself and increasing its membership, the executive committee suggested an organization, with county and local societies as integral parts, similar to that later effected in 1903, but no definite plan was set forth and no action taken.

At this meeting there were selected as members of the Board of Health of Mississippi: First Congressional District, J. M. Taylor and A. G. Smythe; Second District, T. D. Isom and John Wright; Third District, E. W. Hughes and S. V. D. Hill; Fourth District, C. B. Galloway and P. J. McCormick; Fifth District, Robert Kells and C. A. Rice; Sixth District, R. G. Wharton and P. F. Whitehead.

The State Board of Health, thus formed, must, in spite of criticisms of its powers by the executive committee, have found some work to do, for in the minutes of the 1878 meeting, held in Jackson, appears a resolution appropriating twenty-five dollars to pay for some copies of its "First Annual Report" for distribution among the members.

(*Facts gathered from a History of the Mississippi State Medical Association, published in 1910).

BOOK REVIEWS

Physiology and Biochemistry of Bacteria: By R. E. Buchanan, Ph. D., and Ellis I. Fulmer, Ph., D. Baltimore, Williams & Wilkins Co. 1928. pp. 516.

This book is in no sense a clinical laboratory manual of bacteriology. It is an extremely scientific discussion of the biophysical chemistry of microorganisms, particularly of the bacteria, yeasts, and molds.

The book is divided into five chapters. The first chapter consists of an introduction, in which the authors state that their aim is to compile and systematize the present knowledge of the physiochemistry of bacteriology, which now exists in a widely scattered state. Chapter II deals with growth phases and growth rates in cultures of microorganisms; Chapter III deals with the chemical composition; Chapter IV, the physiochemical and physical characteristics of microorganisms and their environment; Chapter V, the energy relationships, growth and movements of microorganisms. The fundamental laws of physiology, chemistry, physics and mathematics are discussed, and applied to the problems of the life and growth of bacteria. The correlation with mathematics is particularly stressed, and the phenomena related to the vital processes are expressed in mathematical formulae wherever possible. The illustrations consist of tables and graphs.

The book is not written for the medical profession. The organisms discussed in greatest detail are not those pathograms which are of interest to the physician, but rather those which affect such sciences as sugar chemistry and agriculture. However, the members of the medical profession who are working with microorganismal atoms will find interest in portions of the book. There are excellent discussions of methods of counting bacteria, titrations of media, and of agglutination and precipitation phenomena. There are liberal references to the research that has been done on the matter presented, and at the end of the book there is a list of the literature cited, which will greatly facilitate one in further study of selected topics.

ADELAIDE MARY ZOELLER, M. D.

Text-Book of Urology: By Daniel N. Eisendrath, M. D., and Harry C. Rolnick, M. D. Philadelphia, J. B. Lippincott Co. 1928. pp. 942.

Eisendrath and Rolnick have given both students and practitioners an excellent reference work on urology in the treatise here reviewed. The mere fact that a work of 942 pages contains 700 illus-

trations in black and white and 11 plates in color, alone calls for special mention. No work on urology that we have seen is so profuse in its illustrations.

The introductory chapters dealing with embryology, anatomy, physiology, terminology, urologic instruments, etc., are complete and comprehensive. The studies in anatomy of the renal pelvis as illustrated with pyelograms is both unique and edifying. Eisendrath's investigations on the anomalous blood supply to the kidney have done much to clear-up certain hazy conceptions of post-operative hemorrhage following operations on this organ.

The importance that one must attach to cystoscopy, urethroscopy and radiography in the study of uro-genital disturbances are fittingly emphasized and illustrated with graphic cuts, some of which are in colors.

Eighty-six pages are given over to the management of gonorrhea; ten of these pages form a separate chapter on gonorrhea in women, and this section is edited by Dr. Irving F. Stein.

Seventy-three pages are allotted for dealing with prostate and seminal vesicles. Besides cystoscopic study, he stresses the use of cystograms in the diagnosis of prostatic tumors. In those cases of chronic seminal vesiculitis that are resistant to the usual modes of therapy employed, he again recommends radiologic study by instilling some opaque media into the vas and then outlining the vesicles in the film. They review the vas deferans and the testes and scrotum in separate chapters; sterility in the male is gone into quite fully.

In passing, the pages dealing with pathologic conditions of the bladder one is impressed with the excellent cystograms illustrating the various types of bladder tumors.

Stricture of the ureter is accorded a proper place in a text such as this is, and again the urograms splendidly reveal the possibilities of the combined radiologic and cystoscopic study of all cases in which vague abdominal pain cause the clinician much worry due to an inability to relieve symptoms.

Tuberculosis of the urinary tract—a condition rarely seen now-a-days in private practice in Louisiana—is fully covered. They stress the demand for nephrectomy in unilateral involvement as nothing short of this hold out any permanent relief.

This work is well-balanced throughout.

H. W. E. WALTHER, M. D.

Urology: By Edward L. Keyes, M., Ph. D., F. A. C. S. New York, D. Appleton & Company. 1928. pp. 763.

There is no work better known in urological circles than "Keyes." Perhaps two-thirds of the men now practicing used this text while in college. The literary labors of father and son have passed through twelve separate editions, beginning with the appearance of Keyes' Practical Treatise on the Surgical Diseases of the Genito-Urinary Organs in 1874.

Dr. Keyes lauds the illustrations of Miss E. M. Freret, New Orleans girl, which are used throughout the work, and are truly beautiful. In all, the books contains 184 illustrations and twenty plates.

The physical examination in urological cases is graphically described; assepsis in urethral examination and treatment is stressed; urethroscopy and cystoscopy are given their true evaluation and the valuable aid urography is today to the clinician is emphasized.

The renal functional tests in impaired kidney function are explained. Keyes' views on urinary antiseptics is rather ultra-conservative; many workers today take a more optimistic view. It is possibly the old story of youth being optimistic and old age being pessimistic. For example, he remarks that pyridium, by mouth, is of no more value than the impression it makes on the patient's mind; for, says he, "if they did not color the patient's urine, they would not color his thoughts." Most workers with pyridium are really not interested in the patients' thoughts in the matter. Results are what count. That is why the profession must interest itself in pyridium and serenum.

Along with the writings of Young, Keyes has done much to draw the attention of the profession to the prostate gland and its relation to focal infection in the male. Also, his chapter on prostatism is very well worth while.

Those chapters dealing with tumors of the kidney, prostate and bladder are modern in every respect. Here the drawings of Miss Freret are particularly true to nature.

He takes up suprapubic as well as perineal removal of the adenomatous prostate. He rather decries repeated intraurethral manipulations (punch operations), such as are recommended so highly of late by Caulk and Collings. He feels that it is decidedly unfair to mislead patients into a feeling of false security by subjecting them to these makeshifts which, at best, can only furnish temporary relief.

Chancroid, syphilis and gonorrhea are included among the chapters of the book, but of the three gonorrhea receives the major attention.

Dr. Keyes' inimical way of writing makes for most fascinating reading. His philosophical sayings, such as "I never know when I need a pyelogram until after it is made," endear him to the hundreds of young urologists in America who look to him for guidance.

H. W. E. WALTHER, M. D.

Hygiene and Public Health: By Parkes and Kenwood. Eighth edition, revised by Henry R. Kenwood and Harold Kerr. Philadelphia, P. Blakiston, Son & Co. 1929. pp. 823.

The fact that this work has attained an eighth edition indicates its practical value. The authors have brought the book up to date and reflects the latest advances in public health and preventive medicine. It contains a large amount of information that is a reliable guide though there are some slight differences as compared with our writers and customs.

While under warming we find that sitting-room or workroom should be from 62 to 65 degrees Far., and that bedrooms less. It is hard to make the public understand, especially hotels and other places frequented, that, when necessary to use artificial heat, the temperature should not exceed 70 or 72 at most, and sleeping apartments not to exceed 60, but they answer the public demands it. More people have suffered from overheating than from a reasonable or low temperature, as suggested.

Dealing with milk allowance of 200,000 bacteria per c.c. is permitted for Grade A, while the regulations prepared and promulgated by the U. S. P. H. Service require not exceeding 50,000, and for Certified milk they permit 30,000, while we require not exceeding 10,000.

The 14 chapters deal with Water; Refuse; Air and Ventilation; Warming and Heating; Soils and Building Sites; Climate and Meteorology; Food, Beverages and Condiments; Personal Hygiene; Communicable Diseases; Isolation Hospitals; Disinfection—Disposal of the Dead; Maternity and Child Welfare; Industrial Hygiene and Vital Statistics. There are 91 illustrations with two additional plates that are sensible and show the points the author wishes to emphasize. Whether public health worker or general practitioner, you need this book because it gives the information you want.

Under communicable diseases recommendation is made with legislative sanction that advanced cases of tuberculosis, where they cannot be satis-

factorily isolated at home, be removed to a hospital for a period of three months, and this can be repeated from time to time as long as necessary. To adequately safeguard against this regulation being harshly applied, the patient has the right to have his case reviewed any time after six weeks. By order of the Justice the local authorities must contribute to the maintenance of the patient's dependents while he is isolated. This seems worthy of emulation.

Doctors interested in preventive medicine and public health work will never regret buying this book. It is well worth while for the medical student.

OSCAR DOWLING, M. D.

An Introduction to the Study of Physic: By William Heberden. With Prefatory Essay by Leroy Crummer. New York, Paul B. Hoeber, Inc. 1929. pp. 159.

This little book is the ninth of a series of medical history monographs published by Hoeber. It differs from the earlier volumes in that, in addition to a prefatory essay on Heberden himself, the full text of the latter's "Introduction to the Study of Physic" is for the first time published. Heberden's advice to the prospective medical student is interesting in that it presents a critical review by a contemporary of the state of medicine in the 1750's. Another interesting feature of this little book is the "Account of a Disorder of the Breast," which is reprinted. It was Heberden who first named and described Angina Pectoris.

M. M. WINTROBE, M. D.

Endocrine Disorders: By Hans Curschmann. New York, Oxford University Press. 1929 pp. 188.

This is a short but interesting treatise upon the glands of internal secretions. In some 180 pages the author has managed to condense a large amount of practical information. As is common with many foreign authors, little reference is made to American literature. In the chapter on hyperthyroidism, Plummer's classification is not even mentioned nor is the question of the common identity of toxic adenoma and exophthalmic goitre considered. The author recommends roentgen-ray therapy for mild and medium severe cases; in severe cases of those intolerant of roentgen-ray, partial thyroidectomy is the treatment of election. In the chapter on parathyroid disorders, the isolation by Collip of its active hormone is mentioned, but the author's experience with the product is apparently limited although he throws out the suggestion that it may well make possible an effective substitution treatment. The

chapter on the gonads is by Franz Prange. This includes sexual inversion, hermaphroditism, homo sexuality and rejuvenation. The author is conservative in his estimate of the value of many of the methods of rejuvenation now in vogue, such as organ transplantation, roentgen-ray or diathermy. He believes in certain cases, where ordinary therapy fails, rejuvenation methods may be tried, albeit, in his opinion, without any undue optimism. The book ends with a description of certain diseases of the nervous system, bones and blood, in which pluri-glandular syndromes occur. On the whole, this book is well written and contains a great deal of interesting material. The author has had a wide experience in endocrine disorders and does not hesitate to express his own opinions which adds much to the value of the book.

RANDOLPH LYONS, M. D.

Modern Methods of Treatment: By Logan Clendenen, M. D. With chapters on special subjects by H. C. Anderson, M. D., J. B. Cowherd, M. D., H. P. Kuhn, M. D., Carl O. Rickter, M. G., F. C. Neff, M. D., E. H. Skinner, M. D., and E. R. DeWeese, M. D. Third edition. St. Louis, C. V. Mosby Company. 1929. pp. 815.

An excellent book for which I have nothing but praise. The advanced medical student and the practitioner will find it invaluable. The comment made with regard to a previous edition is repeated here. This is no dry as dust treatise on materia medica nor a catalogue of procedures. The author has judiciously introduced a sufficient outline of the history of each drug and procedure as to stimulate the interest of the reader in the development of the art of medicine. He has studiously refrained from making his book a treatise on pharmacology while at the same time giving adequate accounts of the physiological action of the various procedures.

Several minor criticisms may be made. One is that the article on dietetic treatment on diabetics is apt to prove confusing to the beginner because of the author's plan of including a large number of different schemes of calculation. A simpler and more dogmatic attitude might better serve the purpose. In the article on the treatment of malaria, a statement is made that the patient should take 30 grains of quinin every night for eight weeks and the context would give the impression that this is Bass' recommendation. Bass, however, recommends 30 grains daily for three or four days and 10 grains every night for eight weeks.

I. I. LEMANN, M. D.

Outline of Preventive Medicine for Medical Practitioners and Students: Prepared under the auspices of the Committee of 35 on Public Health Relations, New York Academy. New York, Paul B. Hoeber, Inc. 1929. pp. 398.

This book has been written and published to meet the needs of the busy family doctor, and help the students of medicine, that they may have a knowledge of those principles on which modern hygiene and public health are based.

The Foreword by Dr. Charles L. Danna and the Introduction by the Editorial Committee, Drs. Frederic E. Sondern, Charles Gordon Heyd and E. H. L. Corwin, are gems and should be carefully read and studied by every practicing physician.

The 21 chapters, while condensed, on account of limited space, give ample evidence of the knowledge of the authors in handling their respective subjects. The book is entitled to wide distribution among the busy practitioner and the medical student as well as those engaged in public health work and preventive medicine.

When one realizes a minimum of 2 per cent of the population is sick at all times, and 3 per cent of the wage earners have tuberculosis, with the knowledge a large portion of these could be prevented, the importance of the periodic examination is vividly portrayed. These examinations afford unusual opportunity to detect early cases of tuberculosis, heart, kidney and other diseases and gives a chance to correct some of the faulty habits of living and aid in keeping people well.

"Public sentiment is demanding the service which the medical profession must be prepared not only to give, but to contribute their proper share for modern preventive medicine." Keeping people well is the task of the general practitioner to a large extent. He must aid and assist the constituted health authorities.

It is interesting to note the activities of the illegal practitioner and to what extent he bleeds the public for incompetent service. The same chapter deals intelligently with self-medication and narcotic addiction.

A perusal of this splendid little book arouses admiration for the marvelous capacity of the authors to compose so much knowledge in so small a space. Every page is interesting and no library is complete without it—especially the busy practitioner of general medicine—the family doctor. The book reflects great credit on the New York Academy of Medicine, the Committee and the publishers.

OSCAR DOWLING, M. D.

Tularemia: History, Pathology, Diagnosis and Treatment: By Walter M. Simpson, M. D., with a Foreword by Edward Francis, M. D. New York, Paul B. Hoeber. 1929. pp. 162.

This monogram is written in a semi-popular style but is, nevertheless, strictly scientific and authoritative in its presentation. It contains all of the important facts regarding the disease, its distribution, epidemiology, reservoir hosts and arthropod transmitters, its clinical manifestations and pathological picture, its bacteriology and serology, diagnosis, treatment and prophylaxis. The following unique characteristics of the infection are emphasized: (1) The ease with which laboratory workers contract the disease; (2) the protection afforded from one attack; (3) the cross agglutination reaction of *Bacterium tularensis* with *B. abortus* and *B. melitense*; (4) the granulomatous nature of the lesions in human cases and the multiple foci of necrosis in laboratory animals; (5) the special protein requirements of the organisms in culture; (6) the pleomorphism of the causative agent; (7) its ability to penetrate unbroken skin; (8) its ability to invade various types of cells in laboratory animals, as well as in the tick and the bedbug; (9) its hereditary transmission through the tick egg; (10) the great variety of arthropod, avian and mammalian hosts; (11) the relatively low mortality of the disease in contrast to the long period of convalescence.

The book contains a complete bibliography of 215 citations and a good index. It is beautifully illustrated and is a credit both to the author and to the publisher.

ERNEST CARROLL FAUST, Ph. D.

Insects, Ticks, Mites and Venomous Animals of Medical and Veterinary Importance: Pt. I. Medical. By Walter Scott Patton, M. B., I. M. S. (Ret'd) and Alwen M. Evans, D. Sc. Liverpool, School of Tropical Medicine. 1929. pp. 786.

Without question this volume is the most pretentious and at the same time the most valuable manual of medical entomology that has ever been published. It is dedicated to twelve medical men and scientists who from 1900 to 1928 have given their lives while studying "the etiology of those diseases the casual organisms of which are transmitted by Insects and Acari."

The book is arranged primarily for use in the laboratory study of the material, particularly as utilized by Professor Patton in his courses in the Liverpool School, covering twenty-eight laboratory period and twenty lectures. No enumeration of the forms covered can do justice either to the plan of the authors or the material which they

have presented. It may be well to state, however, that from this time on the volume will be a veritable bible for the student of medical entomology.

Perhaps the most valuable contribution in the book is the wealth of illustrations, for the most part original, including not only accurate line and stipple but handsome half-tones. These illustrations include both anatomical details and habit photographs of practically all arthropods of medical importance. In the back of the volume there is also a large folded chart, which indicates pictorially the relationship of the several groups of arthropods to one another.

The book is well indexed, attractively printed and bound, and is very modernly priced.

ERNEST CARROLL FAUST, Ph. D.

A Manual of Proctology: By T. Chittenden Hill, Ph. B., M. D., F. A. C. S. 3rd ed. rev. Philadelphia, Lea & Febiger. 1929. pp. 272.

In trying to cover the field in so small a volume, the author has been constrained to be concise. Instead of this being a handicap, its brevity turns out to be a noteworthy feature of the book. Controversial matter is omitted throughout. However, each chapter sufficiently covers the subject under discussion. Descriptions of operations are given step by step in a way easily understood. It is amply illustrated by well selected photographs and diagrams.

MAURICE LESCALE, M. D.

Grenz Ray Therapy: By Gustave Bucky, M. D. New York, The Macmillan Company. 1929. p. 170.

This book is devoted entirely to the treatment of skin diseases by roentgen-ray of very long wave length which Bucky named Grenz rays. He offers a lengthy explanation of just what these rays are and their biological effect on tissue. In an explanation, Bucky tells us that it is not yet possible to obtain for practical purposes the whole radiation band between ultraviolet and roentgen-rays. The shortest wave length of ultraviolet radiation which are available for practical purposes are in the neighborhood of 1300 Angstrom units. Until recently the longest wave length of roentgen-rays used biological and clinical work were about 1 Angstrom units although roentgen-rays of 20 Angstrom units have been produced and analyzed by means of difficult experiments carried on in vacuum. Only a few years ago Bucky conceived the idea of inserting a transmitting Lindemann window (a glass composed of the low atomic weight elements, lithium and

born) into a constant Coolidge tube with a voltage of only a few kilovolts and he therewith introduced into radiatiin therapy soft radiation beams of great constancy. Bucky offers evidence that the radiation beam of from 1 to 3 Angstrom units thus produced have biological effects different from these of the shorter roentgen-rays or of the longer ultraviolet rays. He, therefore, calls these rays Grenz rays, which, translated, means border rays.

The therapeutic applications of these rays on tissue is comparatively new and for this reason it is perhaps better to wait for further investigations along these lines before passing favorable or unfavorable comments.

LEON J. MENVILLE, M. D.

Posture and Hygiene of the Feet: By Philip Lewin, M. D. New York, Funk & Wagnalls Co. 1929. pp. 47.

In the consideration of such an important subject as the care of the feet, this little volume by Dr. Lewin enables the layman to get clear, concise, and, above all, correct information concerning the ordinary foot disturbances. The chapters on the correction of flat foot metatarsalgia are of great value and can be used to advantage by physicians. This booklet is a valuable addition to the National Health Series, and it is to be recommended to physicians and laymen who are interested in this condition.

DUDLEY M. STEWART, M. D.

The History of Hemostasis: By Samuel Clark Harvey, M. D., New York, Paul B. Hoeber, Inc. 1929. pp. 128.

The application of an artery forceps is to us so simple and obvious a procedure that we little realize the travail that has gone into the perfection of modern methods of hemostasis. It is indeed surprising to read how the development of these methods has been hampered by superstition and misunderstanding. A most interesting and instructive account is given by Yale's Professor of Surgery.

M. M. WINTROBE, M. D.

Recent Advances in Surgery: By W. Heneage Ogilvie, M. A., M. D., M. Ch., Oxon., F. R. C. S., Eng. 2d ed. Philadelphia, P. Blakiston's Son & Co. pp. 495.

After rambling through medical journals endeavoring to assort articles of value, it is a pleasure to read this text,—thoroughly up-to-date, concise, well-systematized and conclusive as far as possible. This book is comparable with

the American Yearbook of Surgery. The author's style is clear and readable. The book is divided into seventeen chapters. There are several dealing with topics that the every-day surgeon is not familiar with, and by which he will be greatly benefitted, namely chapters 2 and 3 dealing with the nervous system.

Chapter 7 on Chest Surgery, written by Grant Massie, M. S., F. R. C. S., is very well written. The subject of Muscle Physiology and Spastic Paralysis is reviewed in Chapter 13. The technical aspect of roentgen-ray, radium and diathermy, written by J. F. Carter Braine, and the succeeding chapter on its application and results in surgery, comprise an outstanding feature of the book. The final chapter on Venereal Disease by V. E. Lloyd handles the subject in an admirable manner.

EMILE BLOCH, M. D.

Pettibone's Textbook of Physiological Chemistry:

With Experiments: By J. F. McClendon, Ph. D. Fourth edition. St. Louis, Mo., C. V. Mosby Co. 1929. pp. 368.

This textbook, based on the work in Physiological Chemistry at the University of Minnesota, written by C. J. V. Pettibone, and carried through three editions has been revised and rewritten by J. F. McClendon. It is a brief interesting elementary textbook of physiological chemistry. Most of the usual topics are discussed. It might be considered that certain subjects as blood for example, are disposed of too briefly. On the other hand, interesting items of information not usually found in an elementary textbook, are introduced at various places. Thus there is the discussion of "important foodstuffs."

The illustrations while few are well chosen.

The last third of the book consists of laboratory directions. Chief attention is devoted to qualitative experiments, but methods for the most common quantitative determinations are described.

There is furnished a list of references, consisting chiefly of monographs, textbooks and review articles.

R. C. CORLEY, M. D.

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William Wood & Company, New York: A Manual of Midwifery, by Henry Jellett, B. A., M. D. (Dub. Univ.), F. R. C. P. L.? The Eye in General Practice, by A. Maitland Ramsay, M. D., LL.D. Varicose Veins, by T. Henry Treves-Barber, M. D., B. Sc. Aids to Dermatology and Venereal Disease, by Robert M. B. Mackenna, M. A., M. B., B. Ch. Camb., M. R. C. P., Lond., M. R. C. S., Eng. Aids to Orthopedic Surgery, by Eric A. Crook, M. Ch. (Oxon.), F. R. C. S. (Eng.).

F. A. Davis Company, Philadelphia: Handbook of Bacteriology for Nurses, by Harry W. Carey, A. B., M. D.

Lea & Febiger, Philadelphia: Practical Materia Medica, by Clayton S. Smith, Ph. D., M. D., and Helen L. Wikoff, Ph. D.

Oxford University Press, New York and London: A Textbook of the Practice of Medicine, edited by Frederick W. Price, M. D., F. R. S. (Edin.) Mammalian Physiology, by E. G. T. Liddell, D. M., and Sir Charles Sherrington, O. M., M. D., D. Sc. (Cantab.), F. R. S.

Bailliere, Tindall and Cox, London: The Care of the Nose, Throat, and Ear, by W. Stuart-Low, F. R. C. S. Eng.

C. V. Mosby Company, St. Louis: Research and Medical Progress and Other Addresses, by J. Shelton Horsley, M. D.

Paul B. Hoeber, Inc., New York: Annals of Roentgenology, edited by James T. Case, M. D., Volume 9, The Neck, by Percy D. Hay, Jr., M. D. Otologic Surgery, by Samuel J. Kopetzky, M. D., F. A. C. S. Incompatibility in Prescriptions and How to Avoid It, by Thomas Stephenson, D. Sc., Ph. C., F. R. S. Edin., F. C. S.

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CORONARY THROMBOSIS: WITH ESPECIAL REFERENCE TO SYMPTOMS.

G. W. F. REMBERT, M. D.,
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Notwithstanding that acute coronary thrombosis is today recognized as a disease entity and one of the most frequent causes of sudden death, it was hardly known more than fifteen or twenty years ago. This can be well understood on account of the general impression prevailing until fairly recently that the coronary arteries were end-arteries, a conclusion fostered by the results of Cohnheim's experiments in which he reported that dogs would hardly live more than two hours after ligation of one of the coronary arteries. However, the works of Spalteholz, Gross and others have proven that well developed anastomoses exist with the coronary vessels, the extent of which show steady increase with the age of the individual, and Wearn has shown that the Thebesian veins have been able to carry on the blood supply to the heart muscle when the coronary ostiae had been completely occluded by progressive syphilitic aortitis.

As Herrick well states: "If a coronary artery or one of its largest branches is occluded as if by a thrombus or embolus, the portion of the heart muscle supplied becomes anemic—infected as it is often called and, unless collateral circulation suffices to prevent, undergoes death. The

necrotic muscle may rupture or, if the patient lives, becomes fibrous, perhaps thinned out and bulging in the so-called aneurysm of the heart. While such a scarred portion of the heart wall may be functionless as far as the contractility is concerned, if it holds, it may enable the undamaged portion of the heart still to perform its work in a more or less efficient manner."

In presenting this paper I have nothing original to offer but am endeavoring to bring to you the salient features of many excellent contributions that have been made on the subject as well as some observations of my own.

The right coronary artery arises from the aorta just below the right aortic cusp and the left coronary artery from just below the level of the left aortic cusp. The right coronary artery supplies chiefly the right ventricle and a part of the left ventricle; the left coronary artery supplies principally the left ventricle and gives some supply to the right ventricle. The branches of both of these give supply to the septum. The sino-auricular node is supplied through a branch of the right coronary artery in 60 per cent of cases, according to Gross; the auricular-ventricular node receives its supply from the right coronary artery in 92 per cent; the right limb of the bundle of His usually from the left artery and the left limb of the bundle is supplied by branches of the left and right coronary arteries. According to Hamman, the anterior descending branch of the left coron-

*Read before the Section on Medicine, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 14, 1929.

ary artery is more frequently occluded than all of the other coronary branches combined, fully four-fifths of the cases. As this vessel supplies the apex of the left ventricle, the left anterior third of the right ventricle and a portion of the interventricular septum possibly all of these structures might be more or less affected in the case of occlusion of this vessel. It can therefore be well seen that it will not be possible to determine just which artery will have become occluded in the case of a pulmonary embolus in the brain, spinal cord, kidney or other part of the body.

Huchard credits Drelincourt in 1700, and Thebesius and Bellini in 1703, with the first observations on coronary sclerosis and Cruveilhier was the first to describe this condition in 1850. Frequent reports of rupture of the heart have been found by Benson in the older writings in the case of notable medical men as Morgagni, Hunter, Charcot, Nothnagel and William Pepper.

While Dock contributed in 1896 "Some Notes on Coronary Arteries," yet, it was in 1910 that Obratzow and Strachesko, two Russians, gave the first satisfactory account of coronary occlusion and reported three cases in which two of them had been diagnosed prior to autopsy. Since that time there have been many excellent contributions by eminent American writers as Osler, Dock, Barker, Hamman, Libman, Pardee, White, Longcope, Willius, Levine, Blumer, Gordinier, Herrick, Faulkner and others.

The early observations made in the case of coronary infarcts by such men as Laennec, Corvisart and Rokitansky lead them to believe the condition was that of fatty degeneration of the heart-muscle, although they observed that the supposed fatty degeneration was localized and not general, and Laennec reported that the portion of the heart showing this degeneration "did not grease paper when rubbed on it" and none of them realized that the condition in the heart muscle, as

described, was that of infarct as the result of coronary artery closure. Quain, in 1850, was one of the first to show that this supposed "fatty degeneration" of the heart muscle was the result of coronary thrombosis.

The most frequent cause of acute closure of the coronary arteries is thrombus and, in the majority of cases, there has previously existed well-defined arterio-sclerosis, for arterio-sclerosis is more frequent in the coronary arteries than in any other except the aorta, twice as often as in the vessels of the brain and three times as often as in those of the kidneys. While the atheromatous changes are slow to take place, yet, when the vessels will have become sufficiently constricted, a thrombus might quickly form so as to completely close the lumen of the vessel. While emboli and disease of the root of the aorta might, at times, be responsible, the usual cause, as stated, is thrombus. The results of the occlusion will depend upon whether there has been a gradual narrowing of the lumen of the vessel involved—so that there will have been time for anastomoses with other vessels to take place—or, if it is sudden and without any previous preparation, the infarcted area might go on to softening and rupture before the necessary collateral circulation can have been established. Again, the size of the vessel occluded will be a factor, whether of large size, supplying a relatively large area or a minute arterial twig which could hardly influence the heart except by bringing about some degree of myocardial fibrosis.

In discussing symptoms of acute coronary thrombosis it will be well first to consider three groups:—Those in which death is immediate or occurs in from a few minutes to a few hours; those which show grave myocardial symptoms and who either recover or live for several days or weeks and those whose symptoms are so slight as to make the diagnosis hardly more than probable.

In some of the cases of sudden death, the end comes so quickly and so apparently painlessly that Krehl has called attention to the peculiarities of the death with an apparent absence of terminal respiratory agony without distortion of features and with no muscular spasm. Death is so immediate and so transfixing that the exact manner of it is not known.

In instances in which only small arterial twigs are occluded the symptoms might be no more than a twinge of pain or slight discomfort often thought due to some digestive derangement not known until possibly at autopsy after probably a later and fatal attack of the same trouble, the myocardial fibrosis found will show the changes resulting from previous small vessel closures.

Pain is the outstanding symptom and it is practically always present. The pain is sudden and intense, usually retrosternal and epigastric and sometimes with radiation to one or both arms and it is not relieved by rest or nitroglycerin and usually requires large doses of morphin to afford relief and, in spite of these agents, in some cases, the pain continues and there ensues that condition known as status anginosus and, from which, few recover.

Shock, usually severe, is practically always present. The skin is pale, cold, clammy, and covered with perspiration. The very appearance of the patient shows the great seriousness of the condition. The pulse is rapid and weak, frequently very irregular; the heart impulse is feeble, the heart sounds are so muffled and distant that it is difficult at times to detect the heart's action. Gallop rhythm might be present and embryocardia, or "tic-tac" quality of the heart sounds, might be noted. The blood-pressure, which usually before has been relatively high, quickly falls to 100 or 80 or even lower, the lowered blood-pressure frequently bringing about urine suppression. Some degree of cyanosis is nearly always present and there often develops a peculiar ashen-hue which Sanson

describes as "a leaden tint spread over an earthy hue of skin."

Dyspnea, as the result of myocardial damage, is usually present, and while the three characteristic symptoms of coronary thrombosis are pain, shock and dyspnea, yet pain, at times, might be absent. This is especially in the case of myocardial insufficiency and in which cases dyspnea, often very extreme, is practically the only symptom evidencing the nature and seriousness of the condition.

Pulmonary edema usually occurs in a few hours, as the result of myocardial weakness, in the bases of both lungs but, in some cases, moist rales are heard over practically the whole chest. Pulmonary edema is of practically constant occurrence, especially in the severer cases, and Herrick and Murphy have reported instances in which a condition of the lungs, almost suggesting emphysema, has occurred with coronary thrombosis. Cheyne-Stokes breathing is also of frequent occurrence.

Fever, usually ranging from 100 to 102 degrees F. and polymorphonuclear leukocytosis from 10,000 to 20,000, usually develop from a few to 24 hours after the attack and are the results of absorption from the area of infarction.

Pericardial friction sounds are frequently to be heard, but by no means constant, and, when heard, constitutes one of the most important diagnostic features of coronary thrombosis. They are due to pericardial irritation resulting from the infarction, but might not be present if the infarct lies deeply in the heart muscles or, the friction sounds might not be heard if the pericardial involvement is on the posterior surface of the heart.

The frequent epigastric pain and associated digestive tract disturbances as nausea, vomiting, diarrhea, sometimes even rigidity of the abdominal muscles, might so closely simulate acute intra-abdominal emergencies as perforating gastric or duodenal ulcer,

gall-stone colic, acute pancreatitis and acute peritonitis as to make the true condition difficult to interpret. This has been well brought out by Anderson, Hardt, Faulkner, Marble and White, Levine and Tranter.

The prognosis in the severe cases is always grave and even in the milder cases should be considered serious. It was formerly believed that no patient ever recovered from an attack of coronary thrombosis, but it is now thought by Barker and others that the average death-rate from all types combined is hardly more than 50 per cent. Some cases have been known to survive several severe attacks and there are doubtless large numbers of very mild cases of this trouble that are never diagnosed.

Consciousness is usually present throughout the attack and the patient realizes the intense gravity of his condition and, on account of some agonizing pain, tries to immobilize himself against it, but, in some cases, consciousness is quickly lost and remains so until death.

Diagnosis is made by the sudden and intense retrosternal pain, usually referred to the epigastrium, occurring without physical effort or emotional strain, not relieved by rest or nitroglycerin and requiring large doses of morphin to afford relief, with severe "shock," cold, clammy skin with sweating, rapid, weak and frequently irregular pulse, feeble heart impulse with distant and muffled heart sounds, low blood-pressure, dyspnea, pulmonary edema, fever, leukocytosis, pericardial friction sounds and, sometimes, embolic manifestations. Again, a history of past attacks of angina pectoris or of supposed indigestion, relieved by belching, a "pinch" of soda, etc., together with the incidence of age, if over 50 years, and of sex, if patient is male, will be of help in reaching a conclusion as to the condition.

The electrocardiograph, at times, is of great value in differentiating the arrhythmias, giving evidences of delay in conduction (i.e. partial heart-block), interruptions

of conduction (i.e. bundle branch block, arborization block and complete heart-block), evidences of impaired myocardial tone with low voltage in all leads, and, as so emphasized by Willius, the inversion of the T-wave and of the characteristic S-T interval and upward convexity of the T-wave as shown by Pardee, are often of great assistance in diagnosis and in following the progress of the patient while under treatment. In the clear-cut case of coronary thrombosis, with many of the cardinal symptoms present, the electrocardiograph will not be necessary, but in many mild and atypical cases its use will not only be of assistance, but will be the only positive means of knowing the true condition present.

The differential diagnosis concerns especially angina pectoris from which, at times, it is exceedingly difficult. Most cases of coronary thrombosis will give a history of previous anginal attacks; many cases of angina pectoris frequently develop coronary thrombosis. The conditions are, in their pathology very similar and both have to do with coronary sclerosis and I believe this conclusion is generally accepted and the excellent work of Keefer and Resnik would serve to prove that angina pectoris is due to cardiac anoxemia, and these two conditions would appear to have much in common. If it might even be so considered, there is a difference of degree of anoxemia, in that, in both, there is a lessened blood supply to the heart muscle, except in coronary thrombosis there surely takes place definite, fixed pathological changes which permanently shut off the circulation to the part supplied by the vessel prior to the occlusion.

The contrast of the two conditions might be summed up as follows:

CORONARY THROMBOSIS.

Pain usually without effort—either physical or emotional.

Epigastric pain more common.

Brachial radiation not common.

Dyspnea present.

Pain of long duration.

Arrhythmias frequent.
 Frequent rales in lungs.
 Nitrates do not give relief.
 Attacks might occur at night.
 Shock usually markedly present.
 Low blood-pressure.
 Fever and leukocytosis develop.

ANGINA PECTORIS

Pain usually follows physical or emotional effort.

Epigastric pain less common.
 Brachial radiation common.
 Dyspnea absent.
 Pain of short duration.
 Arrhythmias absent.
 Lung signs absent.
 Nitrates give relief.
 Attacks rarely take place at night.
 Shock not present.
 Blood-pressure usually elevated.
 Fever and leukocytosis do not occur.

In treatment, the patient should be put at absolute rest and morphin should be given generously to control the pain and to keep the patient quiet, when restless. Heart stimulants—as caffeine sodium benzoate, strychnine and Coramin—should be given, if necessary, for weakened heart action. Intracardiac injections of suprarenal extract might be used if death seems imminent. The heart had best be digitalized according to the Eggleston method and daily maintenance doses should be given until the condition of the heart will justify its discontinuance. Barker advises the administration of insulin in the case of persistence of pain—status anginosus—such as was originally suggested by Ambard and from which he claimed such good results. The bowels should be moved by enema. All food should be withheld for several days and, after that, should be bland and supporting and of an alkaline character. Fluids should be given in great moderation. The patient should be kept as much at absolute rest in bed as possible for 5 to 6 weeks, hardly being allowed to move himself in any way, but to be constantly under the care, where possible, of a capable and observing nurse.

When finally permitted out of bed, great care must be taken to see that the exercise allowance is increased most gradually and that all fatigue and emotional upsets should be avoided; that there should be no straining at stool and that overeating should never take place as the consequent abdominal distention and upward diaphragm displacement might bring about such angulation of the great vessels, especially the aorta, as to possibly precipitate another attack. Alcoholic beverages of all kinds should be prohibited, no form of tobacco should be used, and coffee, tea, and all other stimulating drinks should be avoided.

On account of the fact that the majority of cases of coronary thrombosis are believed to be the result of pre-existing arterio-sclerosis it is reasonable to assume that whatever would decrease the incidence of arterio-sclerosis would also decrease coronary thrombosis, as well. Consequently, the proper selection of food in which only a minimal amount of rich proteins and fats are taken and highly-seasoned foods and condiments are avoided and, as already stated, the avoidance of coffee and other stimulating drinks—especially all forms of alcohol—as well as of tobacco and by the taking of proper and adequate exercise and securing sufficient rest and diversion from one's daily work, the chances of such an accident as coronary occlusion would be greatly lessened.

Again, it will be well to mention the possible danger from the intravenous administration of dye for gall-bladder visualization with those who give a past history of angina pectoris or show other evidences of atherosclerosis as both Frothingham and Maher report cases of sudden death following the intravenous administration of the dye in which, at autopsy, acute thrombosis of one of the coronary vessels was shown.

From the foregoing, it can be well seen that the incidence of coronary thrombosis is much greater than generally supposed and physicians should become familiar with

the clinical picture of this condition so that it might be recognized at a time when the greatest good might come from treatment. In many cases, the differential diagnosis of coronary thrombosis from angina pectoris and acute intra-abdominal conditions will be easy; in others, probably difficult and there will be, at times, cases in which the absolute diagnosis might not, at once, be possible but if physicians will keep before them the frequent occurrence of coronary thrombosis when the symptoms of this condition present themselves they will be better able to rule out needless surgery and there will probably be fewer newspaper reports of "acute indigestion" and "ptomaine poisoning" as the causes of death.

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DISCUSSION.

Dr. P. W. Rowland (Oxford): Dr. Rembert asked me very kindly to discuss his paper and I think he had a motive in it. I rather suspect he wants me to say, "Now, old fellow, what will you do with your digitalis here?"

To me the main factor involved in primary arterial thrombosis is one of nutrition of the heart muscle. Coronary vessels are vessels that supply nourishment to the heart and anything that involves their occlusion of course, will interfere with the nutrition of the heart muscle. So it resolves itself into a question of nutrition.

There is one thing I think we should rid ourselves of and Dr. Rembert alluded to it in his paper. I think we ought to quit calling these people who die suddenly or signing their death certificates "acute indigestion" cases. There isn't any such disease. Nine out of ten of those people die with acute arteriothrombosis. They generally die suddenly. They generally die with some acute gastric crisis, vomiting, or pain, epigastric pain.

I want to confine myself to the treatment. Dr. Rembert mentioned adrenalin. I would no more think of giving adrenalin to a patient with thrombosis of the coronary artery and accompanying weakening of the heart muscles than I would think of giving him a grain of strychnin. I would kill him just as sure as fate and within a very short time if I did it.

How would adrenalin do it? You have a blood pressure of from 90 to 100, rarely above 100. That blood pressure, of course, is due to myocardial weakness. There isn't any primary involvement of the vascular circulation. What do you do with the adrenalin? You immediately contract the arterioles in the splanchnic area and shut down the arterioles in the kidney and force the blood all to the brain and to the heart. You have a heart that is already overworked and when you do that you stop it. There is a pulmonary edema already existing, so the adrenalin simply intensifies the condition, puts the amount of work on the heart that the heart is incapable of doing and it is paralyzed at once.

Would I use digitalis? You bet your life! Why would I use digitalis? Because one of the main pharmacological effects of digitalis is dilation of the coronary vessels. This idea of digitalis raising the blood pressure doesn't amount to anything. There isn't anything in that. If you have a blood pressure of 200 in a patient and are afraid to use digitalis, get rid of that fear. That shouldn't cut any figure at all. The chances are it will lower the blood pressure. Digitalis, by dilating the coronary arteries, gives the heart a better opportunity to be better nourished. It receives better nourishment and that is what the heart has to have. The heart dies for the want of nourishment, it becomes paralyzed. The secondary inflammatory changes come about, and unless you can provide nourishment for the

heart in some way, it is going to play out pretty soon.

Now the question comes in concerning the combustion of digitaloids which supply the very food that nature intended for that heart. The Lord Almighty put digitalis in the ground for that very purpose: to be fed to hearts that have a myocardial insufficiency, and that is the only indication for digitalis at any time, a myocardial insufficiency. It makes no difference the cause of that, if there is a myocardial insufficiency, give the patient digitalis and the disease will take care of itself.

I didn't expect to discuss Dr. Rembert's paper. I was very glad to listen to it. It was a splendid paper. He always does give us a good one. If I have added anything to it I am rather fortunate, I think.

President Frizell: Dr. Rowland has been a great student of digitalis. May I ask you what preparation of digitalis you use, powder or fluid?

Dr. Rowland: I wouldn't depend on any preparation except the pharmacopeial, the tincture. None of your proprietary preparations for me.

Dr. T. D. Bourdeau (Meridian): I haven't any discussion to offer because Dr. Rembert presented such a thorough and complete discussion of this condition. I simply rise to add my word to his to impress upon us all to be on the lookout for coronary sclerosis and thrombosis, because it is evidently much more common than we know about. I agree fully with what both of them have said about signing a death certificate as acute indigestion, when it is a fact that most of these deaths are either angina pectoris or coronary thrombosis. The differential diagnosis is sometimes very difficult.

I have in mind one case that I saw that was brought in with what the surgeons called an acute abdomen or some acute surgical condition in the upper abdomen. The doctors brought him in and wanted him operated upon immediately. The case was brought to Dr. Hoskin of Meridian. He very wisely, I thought, refrained from surgery. It turned out to be a nephrosis case with coronary thrombosis. The patient lived a couple of weeks, and presented a classical picture of what Dr. Rembert has shown, with gradual heart failure.

I haven't anything original on it, but it is a condition that all of us should be on the lookout for and not class these patients as having some obscure intestinal or stomach trouble and let them die without any effort being made to do something for them.

Dr. W. H. Curry (Eupora): I want to make mention of one case that I had two years ago in a gentleman aged sixty-five, whose blood pressure was 250 systolic. I thought I was going to have an occlusion of the coronary artery. It seemed very likely. These symptoms Dr. Rembert has gone over were very pronounced in this gentleman and I thought I was going to have to sign a death certificate very promptly for him. He lived near me in town. I was called very suddenly to see him. He had all the symptoms of collapse and severe pain. I had never been able to get the blood pressure down. It had been running high for several months.

I proceeded to put him on digitalis and for the last two years I have been giving him digitalis. He takes fifteen drops three times a day, and when he discontinues it he gets in a pretty bad condition. By giving him fifteen drops three times a day, he is fairly comfortable, goes along pretty well, and his blood pressure has not gone higher than 160 at any time during the last two years.

Dr. G. W. F. Rembert (closing): I appreciate the discussion very much. I will say that Dr. Bourdeau is right as to the incidence, and again I want to impress the fact that it is a condition rather frequently found and that the diagnosis is not one that can only now be made at autopsy. Those cases which I spoke of, including Krehl's comments and the quick death, are the cases that die right now. When you think that the death rate is not over fifty per cent that gives us a chance to watch these cases, study them out and do something for them.

I think using digitalis to lower the blood pressure works out very well at times, and yet, that opens up a line of thought as to why high tension and how digitalis works—but it does.

And now with regard to what my good friend, Dr. Rowland, had to say, I think perhaps I didn't make myself clearly understood.

As far as the use of adrenalin is concerned, it was my purpose, and I think the paper so stated, in case of emergency in which it looked as though the patient were surely going to die to give adrenalin intracardiacally. It is true we expect the peripheral response, but it is a case of "any port in a storm." If you can whip the heart faster than you can whip up the circulation, you might carry it over to the point to which it can go ahead. If you stop to think, there is a tremendous shock, and I think the adrenalin is very splendid for combating shock.

As regards digitalis, I believe it is rather the consensus of opinion today to use digitalis in

most cases. Whether it stores up energy or increases the caloric intake and favors nutrition or, by its specific effect, slows conduction and lessens the heart rate in any given case is a matter of question. However, when used, it will be best that the Eggleston method should be applied and while there are several forms and preparations of digitalis I have preferred the fresh powdered leaf—either in pill form or in capsules—care being taken to see that the drug is well standardized.

In administering digitalis it is not only necessary to secure "digitalis effect" but to make sure that a sufficient amount is given either daily or at other specified times to insure the "maintenance effect" and which, with the average adult will be between $\frac{3}{4}$ to 2 grains of the powdered leaf daily.

ALLERGIC REACTION IN HAY FEVER AND ASTHMA*

NARCISSE THIBERGE, M. D.,†

NEW ORLEANS.

It was with a great deal of curiosity not unmingled with uncertainty that we undertook to study the course of reaction in some 2000 cases treated in the hay fever clinic. We knew in a general way what the result would be, but in some cases, progressing remarkably well, we found the skin reaction mounting and in a few cases where we found hay fever undoubtedly established, the reaction was absolutely negative. These results, apparently contradictory, became clear as we studied the nature of the process involved; we soon realized that this reaction was not a simple process but one which grew more and more intricate as the research progressed.

OBJECT.

It is not our claim to advance a solution of all processes of allergy which have for years puzzled experts but only to present definite facts collected and set forth our explanation of these facts. We feel

that the conclusions reached will be of service to those interested in the allergic process.

The object of this paper is to bring home the fact that the intradermal pollen reaction forms a valuable aid not only for diagnosis and prognosis but with certain limitations indicates from year to year the progress of the case and the efficiency of treatment. Though we hoped that all those who improved would present a descending reaction and those without sufficient treatment or resistance would present an ascending reaction we met with many exceptions. Here is a chart (F) of a severe case whose improvement was such as to require hardly a dozen treatments within the last four years, whose reaction is mounting from year to year; clinically well, though at first glance his chart would indicate the contrary.

Here is the chart (E) of another equally improved patient whose reaction has practically not moved a point. We had expected that well marked cases of hay fever would invariably present a positive reaction and yet, here is the chart (C) of one whose reaction at first was nil, appearing only after the institution of treatment, steadily ascending for sometime before finally coming down! Where can we find an explanation to cover these cases?

EXPLANATION OF REACTION.

In hay fever and asthmatic conditions it is presumed that a specific ferment develops in the tissues which split the foreign protein, this not necessarily being a new substance but one which may represent a different arrangement of cell elements. When this process is completely accomplished the patient is immune; when it is incomplete, or the process not even attempted, the patient becomes sick. The split protein alluded to above may be considered to form two elements:

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*Read before the Orleans Parish Medical Society, April 22, 1929.

First—A non toxic which produces the characteristic hay fever reaction varying in characteristic with each substance tested.

Second—The toxic part which produces the general symptoms—the grave blood and tissue changes—the physical and chemical changes encountered in hay fever being the same in all cases. This theory fully explains the case represented in the following diagram, (F).

This patient is well, that is the toxic part of the split protein no longer bothers him; but the non toxic part is more active than ever before; this to my mind is the only explanation possible of an otherwise very puzzling case.

Another curious phenomenon in allergic cases in the fluctuations observed in the clinical aspect of the cases according to the seasons.

Here certain articles of diet may precipitate an attack of hay fever or asthma at one time and not at another, though the allergic skin reaction will remain constant whether the attack is on or not. What takes place in these instances is that the metabolic products from ingestion are added to the toxic element of the split pollen proteins forming a dose too large for the patient to combat.

ALLERGY AND ANAPHYLAXIS.

This brings us to the discussion of allergy. A person may be allergic all his life and it may be that he never will feel it unless an anaphylactic reaction forces him to realize it at a moment's notice. Allergy is a potential condition; anaphylaxis is decidedly kinetic. A person may be, and usually is, born allergic but he acquires anaphylaxis when weather conditions, locality or distribution of pollen affect his metabolism, an expression of which may be evidenced by asthma, hay fever, angioneurotic edema, urticaria, eczema or epilepsy. Many definitions of anaphylaxis are found but the one we

have in mind in these pages is that which is taken as an expression of an allergic reaction.

The sensitizing element may enter the system by inhalation in the form of pollen or house dust, producing typical attacks of hay fever or asthma manifesting themselves at special seasons; or entrance may be obtained by certain foods through the digestive tract overwhelming the hay fever sufferer who is already taxed to his limit during the pollenating season. Hidden focal infection, as is well known, may likewise light up and maintain the process.

METHOD OF TESTING.

The method of testing in all our cases has been the intradermic; when solutions stronger than 100 units to the cc. were used, due allowance was made. If 1/20 of a cc. or 5 units produced in twenty minutes a wheal less than 0.3 cm., the reaction was not considered. A larger area, or redness with pseudopods, was interpreted as a reaction: 2.5 cm. being marked 100; smaller areas were tabulated accordingly. All 3 classes of pollen found in our section were tested for, because it very rarely happens that an individual shows a reaction to one form of pollen without responding to other varieties though not necessarily in the same degree. Moreover, as house dust containing emanations from animals etc., as also food were found possible sensitizing agents, these were included in the tests. Many failures in curing allergic cases have undoubtedly been due to the fact that attempts were concentrated to eliminate one cause and other causes equally at work were entirely overlooked. Look for and attempt to remove in all cases not only the main causes but all other agents which may sensitize the patient. These sensitizing elements may enter not only by inhalation but by ingestion and infection.

In the order of their importance they are classified as follows:

Pollen

Epidermal dust from animals etc.

Food and

Closed and incompletely drained foci.

Many cases refusing improvement with extract alone quickly responded when freed from feather and wool dust and placed on a suitable diet.

The tests are carefully recorded, uniformly applied, and interpreted and entered before the previous reading is consulted or the progress of the case ascertained. We seldom encountered a severe general reaction in our tests but occasionally in the course of treatment a severe reaction may be encountered. So it may not be amiss to pause here for a short spell to discuss this disagreeable phase and review the means to combat it when it does appear. A reaction exceeding 2 inches and persisting more than 24 hours is considered a severe reaction. A rash, local or general may be seen;—nausea, headache, vomiting, or even collapse may appear. On the first warning, administer a quarter of a cc. of adrenalin and repeat in a short interval if necessary. The test should always be applied intradermically, in this way the absorption is slow and the reaction easily controlled.

CAUTION.

We do not test cases whose resistance is too low or who have just recovered from an attack or to whom adrenalin has recently been administered.

SUMMARY.

From a lengthy and exacting scrutiny of the rich material studied when handling the 4000 cases during the past 14 years, we were able to divide the expression of the reaction into 5 groups each of which brings out facts of special interest.

First—The groups where reaction and chemical course ran parallel. Classes A. and B.

A. Class A. by far the largest, represents 69 per cent of the cases studied.

The cases entering this group show improvement in all reactions and their clinical course followed a steady improvement; 15 per cent of these cases remaining free from recurrences. Here the toxic and non toxic elements follow a parallel course. All charts marked A. represent improved or cured cases. The straight line indicates the first series of test; the stars, the second series, the interrupted line, the third series, and in some long standing cases we were able to obtain a fourth tracing shown by the heavy black line. The tracings spanned by many years emphasize the fact that patient and persistent efforts were required to obtain results. Cases of apparently hopeless asthma of over 20 years standing required five or six years of constant treatment to obliterate the reaction.

B. The series of charts marked B. show the reverse of chart A. and form 6 per cent of the cases tested. Here due to insufficient or irregular treatments or lack of resistance the clinical symptoms remain stationary or increased, the reaction showing the gradual rise of susceptibility. All the charts marked B. also indicate that the toxic and non toxic elements went hand in hand.

C-2—The Group C. where the reaction rose before disappearing though the patient showed steady improvement. This series represents 2½ per cent of the cases tested and is interesting because it partakes of the nature both of A. and B. classes. Apparently these patients before becoming definitely immunized show a negative phase indicated by a rise to be followed later by a definite fall in the reaction.

D-3—The group D. where only one reaction showed improvement while the whole clinical course was clearing. It is in these cases (87/10 per cent) that the toxic and non toxic element of the reaction do not work in harmony.

Before becoming perennial, hay fever and asthma cases are always seasonal. In

this fourth class we see a promise of return to normal by a falling off in the spring reaction alone. With the more potent pollen suspensions now being tried, we hope a return to normal likewise of the fall reaction.

E and F-4—The groups E. and F. where anomalous curves are seen the reaction remaining stationary or even rising though the patient is steadily getting well. These curves look mysterious and would be difficult to understand did we not realize that in exceptional cases the toxic element is neutralized but the non toxic element remains active for sometime. The case represented in E. is free from symptoms but the reaction has not varied.

Chart F. represents an individual who since 1924 has required less than a dozen treatments but whose reaction is steadily mounting.

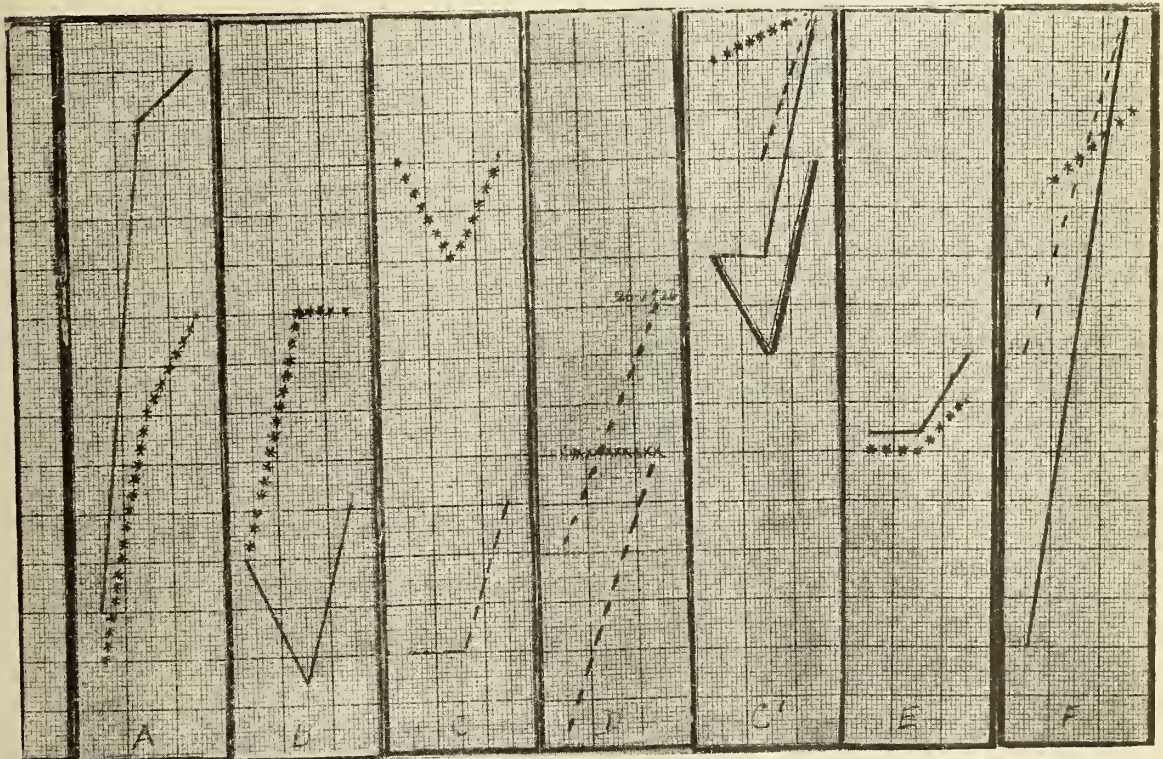
G-5—The last group G. where the cases gave no reaction to pollen tests and proved to be allergic to food only.

Chart G. is that of a case of asthma due to food allergy. Here, as would be expected, all the pollen reactions are negative.

CONCLUSIONS.

From a study of these charts we feel justified in drawing the following conclusions:

1. The allergic reaction of hay fever diminishes as the immunity increases.



Straight line indicates the 1st test applied.

Stars indicate the 2nd test applied.

Interrupted line indicates the 3rd test applied.

Each space represents 5 units.

(1) Charts showing the toxic and non-toxic elements of the split protein moving in the same direction.

A. Toxic and non-toxic element falling as the case improves. Patient with fall hay fever 11 years duration.

B. Toxic and non-toxic elements rising as the case fails to improve. Perennial asthma in an aged woman of 27 years duration.

C. Allergic reaction at first absent; under treatment

it rose to 60, then fell as the case improved. Perennial asthma of 28 years duration.

D. Only spring hay fever improved at present. Hay fever of 7 years duration.

(2) Charts showing the toxic and non-toxic element of the split protein not moving in the same direction.

C. 1. At first the reaction rose though the case showed a steady improvement. Asthma and hay fever of 33 years duration.

E. Reaction stationary though the case is clearing. Asthma and hay fever of 27 years duration.

F. Reaction rising though the case is practically well. Fall hay fever 39 years duration.

2. Susceptibility may exist with inability to produce a response.

3. Susceptibility may have existed but immunity having been induced, no reaction is obtainable.

4. The allergic reaction may disappear for one variety of pollen and not for the others.

5. Reaction corresponds to clinical history.

6. Reaction takes years to disappear while fluctuations at short intervals do not form a good indication of improvement.

DISCUSSION.

Dr. F. M. Johns (New Orleans): Dr. Thiberge's work in hay fever and asthma extending over a large number of years during which time thousands of patients have passed under his observation deserves more than passing mention, and I am only too sorry to mention that I am not well enough versed in the science of allergy to appreciate to the fullest some of the remarkable vagaries of the skin reactions he has told us of tonight.

Just why we should be allergic or not is one of the most fascinating subjects confronting immunologists today. Heredity may explain some of the facts—but the variations in susceptibility to anaphylactic response within the individual from time to time is more than a puzzle. Dr. Thiberge explains this on the theory of overloading—"an excess of toxic element from indigestion," but is it not also true that the skin area subjected to test is always "overloaded" when a test is performed? It's my personal feeling that the gross reactivity of epithelium to specific irritation is last in the realm of colloidal chemistry, and that there is a yet unfound chemical whose depletion from the epidermal cells lowers their reactivity to any form by stimulation. How else could we explain such aberrant results?

Again an increase or decrease of the positive skin reaction may be noted either with or without treatment—so that I doubt whether the clinical course of the disease can be gauged at all by such reactions. I hope such a statement will not deter Dr. Thiberge in the pursuit of still more information by a continuance of his arduous labors, for it is only by the analysis of a large amount of such data that the profession can ever arrive anywhere.

Dr. John A. Devron (New Orleans): Dr. Thiberge had a wonderful paper—I congratulate him. I wish to say a few words about allergy regarding treatment of skin diseases.

Food allergy is a frequent cause of symptoms in adults as well as children and it is difficult in many cases to determine the cause of the allergic symptoms, but with skin tests I have found such common foods as milk, eggs, wheat and sugar give positive reactions. I use both the **cutaneous scratch method and the subcuticular tests**. Even when skin tests are negative, changing diets have a wonderful effect in improving the lesions. In 309 cases of urticaria only 80 per cent gave positive skin reactions.

Hazen says allergic dermatitis may be local or general, viz.: urticaria, erythema multiforme (Boaz cultivated bacillus perfringens from blood), purpura, and even some cases of lichen. Many cases of infantile reflex eczema as well as dermatitis herpetiformis yield to diets. Allergy is also manifested by pollens, drugs taken internally, animal hairs or dandruff, house or street dust, fur, wool or dyed goods and household articles such as feather pillows, hair mattresses and woolen blankets. Bacterial substances, focal infections, irritability of the vegetative nervous system, physical agents such as heat and cold, endocrine disturbances, all cause allergic reactions. The successful dermatologist must work out the provocative substances if he expects a permanent cure.

Blood pressure, history of the case, telling the patient not to worry, is silly. Calcium lactate, ultraviolet light, lavage of the colon, all help to relieve. Desensitization can be accomplished and it is a satisfactory method of treatment. In syphilis some European doctors use an antigen obtained by vesication of secondary syphilis, employing it by intradermal injection in the hope of creating an allergic reaction to relieve the syphilis.

Allergic reaction may follow three courses:

First: Disappearance in from two to three days.

Second: Partial or complete resolution followed by a recrudescence of a specific type.

Third: An intense reaction with progression and activity over a long period of time.

Dr. E. D. Fenner (New Orleans): Did I not feel quite certain that my friend, Dr. Thiberge, will understand that this contribution to the discussion is not given in the spirit of levity, but because to my mind it is so extraordinary a manifestation, I would hesitate in what I am about to say.

Recently, an educated, extremely intelligent and very highly organized woman told me that she had been a victim of hay fever and that she had consulted half a dozen doctors, been treated by Dr. Scheppegegrell, tested out, and received 49 injections for hay fever, yet without deriving any benefit of any kind. A friend of hers told her that Christian Science would cure her. So she evoked the services of a Christian Science operator, who did not appear to be harmonious and who did her no good. She discarded his services and employed a woman Christian Science operator who gave her a number of treatments. Then for two and a half years, after having been the victim of hay fever until she was nearly frantic, she never had a symptom. She told me, however, that during the past three or four months there has been a recurrence of the hay fever symptoms, which is annoying her a great deal. "Then for God's sake," I asked her, "why don't you get another Christian Science healer?" She replied that as yet she had not made up her mind to do that.

This history, which I believe to be perfectly honest, struck me as being exceedingly interesting. To a hay fever man it might perhaps be easy to interpret, but to an orthopedist like myself the testimony of this woman certainly is puzzling and very hard to understand. Can it be some unknown agent, perhaps a psychic condition, complicating some of these cases? I certainly do not question the sincerity of this patient, yet cannot think that hay fever ought to be cured by Christian Science.

Dr. Narcisse F. Thiberge (closing): With reference to the case cited by Dr. Fenner, I wish to say this. When talking Christian Science you are discussing a subject which I have not studied and which I do not intend to take up. My explanation of the case, as I see it, is this: I have handled many cases of hay-fever and when they were passing through the anxious state of the reaction they considered themselves as not benefited, or even made worse by the treatment. I have not been able to follow up all these cases, as some did not report for further treatment, but those that I have been able to keep in touch with an ultimate improvement or cure has been the almost invariable result; therefore the deduction in this case, as in the others, is that while going through the process of stimulation to treatment, patients probably react more energetically than we realize, but when they stop, they feel the benefit from the treatment, which manifests itself in one or two years. (Such is the conclusion that I have been able to establish to my own satisfaction, and to that of a good many people who

have followed with unbiased minds these cases—that they always showed improvement sooner or later. The coincidence of a Christian Scientist taking it just at the psychological moment reminds me of what old Dr. Faget said: "Blessed is he who gets the patient last, because he gets the credit for everything."

What Dr. Devron brought out about the food of the mother for the nursing child is a point that deserves a great deal of attention. In cases of allergy in nursing children, do not test the child, but the mother; it is a very good point to bring out.

I have to thank Dr. Johns for his very able dissertation of the case and I want to say that we have repeatedly tested cases, tested them a sufficient number of times to realize that the treatment by itself cannot be accused of producing allergy in an individual. It can stimulate a dormant allergy, but it cannot produce an allergy in a patient who is not already allergic.

PUBLIC HEALTH MEASURES AND METHODS IN PREVENTIVE MEDICINE.*

F. MICHAEL SMITH, M. D.,

VICKSBURG, MISS.

Not long since a health department, or health officer, functioned little other than to maintain a strict quarantine over contacts with communicable disease, or more often perhaps he was called upon to correct outstanding nuisances as the disposal of putrefying carcasses, to remove unsightly rubbish, clean vacant lots of weeds, tin cans, etc. In the light of modern sanitary teaching many of these activities were of little, if any value, in abating or preventing sickness. But in the passing of the years bacteriology, through the labors of the masters, gave to medicine and the discerning world authentic proof of the causative factors of many diseases and isolated the pathogens of many communicable diseases such as typhoid, diphtheria, tuberculosis, syphilis, meningococcus meningitis, etc., and forever dispelled the mysteries and morbid fancies

*Read before the Section on Hygiene and Public Health, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

that had hitherto possessed the medical as well as the lay mind. Theories of miasma, foul air, witchcraft, hoodoos, offended divinities, fomites, etc., as causative factors of disease gradually gave way to the authentic teachings of scientific medicine.

It is indeed gratifying to public health workers to note the significant remarks of our President in his inaugural address when he states, "Public Health Service should be as fully organized and as universally incorporated into our governmental system as is public education. The returns are a thousand fold in economic benefits, and infinitely more in reduction of suffering and promotion of human happiness."

It seems the day has dawned when the public realizes more forcefully than ever the truth of the oft quoted statement, "that government, when founded on the principles of equity and justice guarantees to its subjects liberty and protection of life and property," the protection of life not alone from the assassin within or a foreign foe, but protection from all forces that undermine or shorten the span of life. Hence the establishing in practically every State of the United States, a Department of Health to which by legislative enactment various powers are given for the suppression of epidemics, prevention of disease and promoting of the strength and vigor of its citizens.

In our complex social organization by virtue of the propaganda of various cultists, sects, fanatics or conscientious objectors, the question has been raised, should a government, by virtue of its guarantee, ever take life, deny liberty, or interfere in property rights when possession prevails? Likewise the question has been raised to what extent should a State function in safeguarding the life and health of its subjects, when the same State has licensed certain subjects to perform a seeming similar task and guarantees to them protection in their chosen vocation to which they have devoted time and means for the performing of the task? In a democratic government, like ours,

which exists by the will and consent of the governed, we believe the first question has been satisfactorily answered by the courts of justice which have ruled that life is not guaranteed to any subject who has forfeited his rights to life by becoming a destroyer of the life of law abiding citizens, that no citizen can claim a constitutional right to liberty whose acts bring peril and hazard to the rights and liberties of others, nor can the possession of property unrightfully obtained be guaranteed at the loss of another citizen who formerly possessed same through lawful earning. Reasoning by analogy we think the second question might be as satisfactorily answered in a democratic government by stating, a State through its County Health Departments does not exceed its constitutional rights, neither does it usurp the rights of any individual or profession, nor does its actions in any way fall short of justice to all if its efforts are to prevent and control disease that by virtue of their communicable and fatal nature would be a menace and a hazard to the life of other subjects, and as long as its efforts are confined to this line of demarcation, the prevention of communicable disease and the increasing of the strength and vigor of the individual, the means and methods employed in our judgment should not be questioned.

The question formerly arose and may linger in the minds of some yet. How far should a County Health Department, or County Health Officer, go in the legal and ethical administering of serum or drugs? In considering the legality of an act we often desire a specific law for such action, but we find no such law given to the general practitioner of medicine for the administration of curative drugs, other than the law implies in his license to practice medicine, to use any and all curative means and methods that are not used in a way to jeopardize the life of a patient, but might restore health; so in the practice of preventive medicine, the health officer, who is a specialist in this branch of medicine, is legally within his

rights to use any method or means, serum or drug, for the prevention of communicable disease that is not a hazard to the individual or the public whom he serves in this official and lawful capacity. Ethically he makes no breach of ethics as long as methods and measures are for disease prevention.

Another question frequently asked and discussed by the medical profession relative to the public health activities of a County Health Department was to what class of individuals should he render this protective service, rich or poor, to the public generally or to children only? In our conception of public health it is a service and a duty the County Health Department is due all individuals alike and should in no way be considered analogous to a benevolent society, social welfare or charity organization, and in rendering this protective service to the wealthy or the poor no more pauperizes its citizens than does the protections given to every citizen through the State or County Attorneys in their advocacy for them before the courts, or rather in their efforts to prevent misdemeanors and crimes through the courts of justice, nor does it in any way render him a more dependent or worthless citizen, but rather inculcates in him a spirit of pride, a greater appreciation of a government that gives him a greater security against an unknown enemy that stalks through the land by day and by night leaving in his wake sickness and sorrow, death and fear.

In considering this question as well as all other questions of public health, we must not consider only the legal and ethical rights of the general practitioner or the specialist in preventive medicine, but the right of the individual citizen. The right of the public should not and must not be ignored, for not only has the progress in medicine, curative and preventive been made by the Fathers of Medicine, but it has largely been contributed to by the patient and oftentimes non-remunerative efforts of men of various callings and fields of endeavor, the scientist, the

chemist, the sanitary engineer, veterinarian, agriculturist, scientific instrument builders, too great a number to catalogue; they have all contributed their effectual "bit;" the toiler in the field, the digger of ore, the accountant and clerk have all borne their pro rata of taxes that have made possible the Colleges and Universities that have been a means for our qualifications in our chosen specialties and it behooves us to render to them (the public) this meager portion of preventive service that a State is obligated to give.

But it should ever be borne in mind by the personnel of County Health Departments that their mission is health and prevention of disease, that there is all the difference in the world in preventive and curative medicine, that no official of State or national government should arrogate to himself the legal or ethical right in the practice of preventive medicine to treat pathological conditions or correct physical defects. The domain of surgery or curative therapy is never within the jurisdiction of his services.

When preventive medicine applied by all branches of medicine more nearly completely eradicates communicable disease the future ideal and vision of public health workers will be to build health departments whose aim and mission will be not to combat disease but to make possible and stable health.

President Hoover has most aptly expressed this ideal in his "Bill of Rights for the Child," when he says, "The ideals to which we should strive is that there shall be no child in America that has not been born under proper conditions, that does not live in hygienic surroundings, that does not have prompt and efficient medical attention and inspection, that does not receive primary instruction in the elements of hygiene and good health, that has not the complete birthright of a sound mind in a sound body, that has not the encouragement to express in the fullest measure the spirit within which is the final endowment of every human being." To reach such a goal we

must have a working programme for the present, a programme that may be altered or made fuller to meet future needs, a programme that will meet the ideals of News-holme when he states, "Preventive Medicine is the science of measures for the prevention of disease, and of measures which will serve to uplift the standards of health of each member of the community." This to our mind embraces all factors, psychological, educational and otherwise that enter into a public health program.

If you will refer to the supplemental sheet we have furnished you, you will see a tentative programme that we have submitted and you will observe that the proposed activities are brought under ten (10) major heads, many of which have one or more subdivisions. It might be of interest and profit to discuss in detail these major divisions as well as the subdivisions, but the time allotted us forbids, for a detailed discussion would necessitate a volume or volumes rather than a paper with time limitations, but permit us to say of the first heading, Educational Work, that an intensive and authentic educational programme continuously, faithfully and courageously carried on by means of lectures, bulletins, newspaper articles, exhibits and perchance the radio, but especially through the personal touch, will be found to be of inestimable value in the cause of public health and incidentally in the advancement of the medical art; for the fundamental principles on which medicine and surgery are based and upon which the healing art is made secure is, that there is a cause for every effect, an etiology precedes every pathology. Through the County Health Department these facts are constantly being instilled into the minds of the children of the land and into the minds of that great percentage of human beings who do not think deeply or soberly for themselves. This is the campaign of promise that bids fair to disconcert and route the fakers of medicine, the cultist, the charlatain, nostrum venders, faith healers and pseudo science professors who sorely infest the land.

We respectfully invite and solicit your careful study of the tentative public health programme for County Health Departments that we have submitted and urge your honest evaluation of its merits and demerits. Now in concluding this paper let us remind you that Watts has said, "The health of the people should be the first care of the State and the highest aim of scientific medicine is the prevention of disease, and the duty of the doctors is not only to cure disease, but to co-operate with the organized forces to prevent it." The burden of this paper might be said to be to show that a county health department in its inception or purpose is to be an official organization that all medical men of vision could endorse and support, that its personnel should be made up of public health workers of the medical, dental, nursing and allied professions, that their specialty was preventive medicine, a branch of the medical science, and that its mission of necessity is preventive medicine and preventive medicine must prevent or fall short of its high mission to the public who support it.

The building of sanitary privies will reduce the incidence of typhoid, cholera, dysentery, tuberculosis, trichinosis, hookworm, and other intestinal parasitic diseases. Food control, communicable disease control, immunization, antimalarial work will all reduce the incidence of disease, and will also reduce the incidence of a devitalized and impoverished citizenship, then if there were no altruism in the medical man and his viewpoint were always selfish would he be the loser? Who would select an impoverished people for a financial success in the practice of medicine? Could the work of a health department be detrimental to the practicing physician when it hopes to get all correction and remedial measures accomplished through him and he alone is the arbiter of all fees and all favors? Is it of any consequence to the medical profession who treat and correct pathology to observe that through the partial efforts of preventive medicine the time of life or rather life expectancy has been tripled in the past three

hundred years? Eighteen years was the life expectancy then; today it is fifty-eight. With this total of years added to human life the physician has three times as long to care for the maladies and accidents of life as he formerly had.

Now the well equipped, thoroughly trained, efficiently specialized physician of today has naught to fear from the sometimes hoisted fallacy of "State Medicine" or the legal and legitimate practice of preventive medicine, for as long as new life comes to gladden the heart of motherhood, as long as ingenious and industrious man builds more deeply and at greater lengths and to greater heights the industries of the world, the concomitant accidents, hazards, and degenerative maladies will ever engage the careful attention of the painstaking physician and compensate him most acceptably.

We trust this paper may bring a clearer understanding of the purposes and legitimate activities of an official health department, especially if any such clarification were at all necessary. Oftentimes a misunderstanding or misinformation will engender criticism, dissatisfaction and intolerance, while a clear understanding and correct information may bring approval, unity and co-operation.

This is found to be almost universally true of real men, or true men, who look for the high way of life, who travel not the low and who recognize that "to every man there openeth a high way and a low, and every man decideth the way his soul shall go."

DISCUSSION

Dr. J. W. Lipscomb (Columbus): Mr. Chairman, as our good friend Dr. Dan Williams said about the Chairman's paper, it is practically a closed issue when it comes to the discussion of this paper. I don't see where we could very well add to or take from, if we are honest men.

Dr. Smith said: "Would any man choose an impoverished people with whom to locate and practice his profession?" May I tear a leaf out of my own life's history for you, going back some twenty-seven years. It is a true story, and whether or not you believe it, you will, at least, if you do not be-

lieve it, agree that I am an accomplished prevaricator.

I was called into a family on the tenth of October to see a case of typhoid fever. From the tenth of October to the fifteenth of the following March I was at that house from one to three times a day during which time I treated five cases of typhoid fever. They all got well. I am very fortunate in being able to say that.

I received some little acclaim as a fever doctor. My remuneration, going back to Dr. Smith's point, was a half-starved, tick infected bullock that I sold for four dollars. I would rather live under the regime as brought out by Dr. Smith.

There comes a time in the affairs of all wise men when an all-wise Providence says: "Thus far shalt thou go and no farther." That seems to be the key to the situation.

I don't believe that any educated, rational thinking human being in this day and generation could gain his consent to in any way knock, as we say, preventive medicine, but how far? I think the time is rapidly approaching, and I hope that our good President quoted from by Dr. Smith with reference to the rights of the child, may before he leaves office in some way or somehow get us a seat in the great cabinet of the United States and have a department of health beginning there and coming on down the line.

You doctors, as I, received a letter sometime ago from the Anheuser-Busch Brewing Company. The point I want to make is that they said the government had practically confiscated their business. We all know there are many, many bartenders throughout the world now without work.

I claim that if the old-fashioned way of practicing medicine was in accordance with the old-fashioned way of tending bar, then we have advanced that, and if we are out of work, then we ought to be out of work and submit to progress. Therefore I think that Dr. Smith has certainly given us a wonderful and instructive paper, and you know and I know and we all know, demonstrated here on this floor from time to time, that there is not the least bit of curative medicine advocated or put forth or practiced by any of us.

As to this diagram (I call it a diagram because when I went to school that is what it was called, but I believe he called it a table) with those ten major heads, I do not think after a careful digest of this paper and of this diagram (the doctor sent me his paper and I read it and enjoyed it) that we as practitioners, members of the State Medical Association, can find any fault.

I want to go a step farther. I want to go back to my friend, Hardie Hayes' venereal clinic, and

I want to add to it and I want to see it practiced all over the state of Mississippi again. I really think as Dr. Smith or Dr. Applewhite brought out in his paper, there is a very, very grave and excessive mortality, and to say the least, very, very grave and horrible afflictions that come into the affairs of men through that particular place. I should like to see that added to this. I know Dr. Smith did not want to add that, because he considered practicing medicine a curative medicine.

I want to congratulate the doctor and I commend his paper to you; and I commend the thought to you, or rather suggest the thought, do not be afraid of state medicine, because I do not think there is any danger of state medicine as long as you or I, or anybody in this house lives.

Dr. L. S. Lippincott (Vicksburg): I can't give you any of the oratory that he preceded me. I am very happy, however, to have this opportunity of congratulating Dr. Smith, not only on his paper, but on the service that he has rendered in Warren County in the last year and a half to two years.

At the time of the flood, Warren County was without a full-time health officer. The need of one was very apparent at that time. The county society then took over the work that should have been done by a health officer, and in doing that saw what we missed, what we needed.

Following the flood, there was a special opportunity to get a health officer in Warren County, and the county society practically to a man backed that movement. I am happy for that.

When it came to choosing a man, we had some doubts. Conditions there were not the same as in all places. I suppose you would all say the same thing. We knew we had to have a man who would really do something and do it in the right way. That matter was talked over with Dr. Underwood and with his department. Dr. Underwood and his department chose Dr. Smith for us. We know now that they could not have done better. They ought to be congratulated on the work that has been done in Warren County at this time.

Today I just want to say a little about the laboratory in connection with the public health department. I have done some of the work for the Warren County Department. I think the laboratory is an essential part of the program, but in saying that, I think the laboratory should confine its activities to public health which has to do with prevention, just as Dr. Smith has said and as he has practiced. He has not used the laboratory for other purposes.

He makes it a point, first, to diagnose a communicable disease. The laboratory here is a big

help. In a number of the diseases, such as smallpox, possibly scarlet fever, chickenpox, and that type of disease, the laboratory isn't of so much service, but in diphtheria, typhoid, paratyphoid, dysentery, meningitis of the meningococcic type, the laboratory can make the diagnosis for the public health department and should be used for that. It is possible that syphilis should be included. If you do, it is my opinion that you should include only active syphilis, syphilis with open lesions which are a danger to the public. If you take all the syphilitics, the old and the new, you have a much larger problem.

There is a question in my mind whether active gonorrhea should come under this head, but it could very well in the acute stage.

In regard to this discovery of carriers, you could include practically the same diseases and this would include contacts as well as actual carriers. We had an experience in Warren County this last year which brought out the point of necessity for a laboratory and for a laboratory that is equipped to go into the game at any minute. We were building a bridge across the river. The company that was putting down the caisson had something like 250 men working. A case of meningitis developed among those workers. It wasn't recognized as meningitis. A man died from the disease and it was recognized only at autopsy. Even then we might have missed it because we were looking for something else, and finally, not finding what we were looking for, we did find enough pneumonia to have killed the man and we almost made up our minds not to go into the head. When we went into the head we found extensive meningitis. The body had been embalmed so it was impossible to get cultures. We found, however, a few typical meningococci in the pus cells. It is of great importance to discover something of this sort for a company with a big payroll to avoid excessive loss of time.

By having a laboratory equipped, you can go right through those workers and find all the men who were working with the man who was sick. By taking nasopharyngeal cultures you can pick out the carrier. In this case we made some 250 cultures from the office people as well as from the caisson men. We found one carrier. He was isolated and we had no more cases of meningitis occurring in that company.

Various sorts of treatments to the nose and to the throat were given which helped to satisfy public opinion, but which to my mind were not particularly necessary other than to keep people quiet. People are very likely to become disturbed over meningitis much more quickly than over some other diseases. The laboratory was of value in this case.

This laboratory is of importance in regard to release from quarantine. One negative culture isn't enough probably in any of these diseases. It is necessary to have two, preferably three, taken at different times, with care to take the cultures before some local treatment has been given. In fun, I have accused Dr. Smith at times of trying to get rid of diphtheria carriers by taking the culture immediately after the throat was sprayed. However, I did not mean that, because he has never done it. However, it is possible to get negative cultures if you are trying to do so.

Next, the analysis of drinking water is most important. An analysis once in two weeks or once a month is not sufficient. Drinking water, especially the supply for a big town or city, and especially if that supply is drawn from contaminated sources and has to be treated, varies greatly from day to day. That should be watched carefully. Probably every day or every few days is not too often for examination.

May I include with the drinking water, although Dr. Smith did not put this down as a special heading, the swimming pool. We are having much said about swimming pools in recent years. It is a fine thing to have a swimming pool, but people in general think that any sort of water is all right to swim in. Personally, I can't see any reason why the water in which you swim should not necessarily be just as clean and as wholesome as the water you drink. I do not believe anyone ever went in swimming without getting the water in his mouth, and if he gets it in his mouth there is just as much danger as though he drank it purposely.

The analysis of milk, of course, includes the bacterial count and some chemical analysis. In connection with the analysis of milk, we have to consider undulant fever, and we are going to have to consider it more according to what has been written. Undulant fever has not been recognized very well, but apparently it is rather widespread. Of course, it isn't looked for in doing the regular milk examination, but is referred back to the cow. We should be looking for it in people who are suspected of having typhoid or who have unaccounted-for fever.

Under child hygiene and maternity, the expectant mother, of course, should be examined for syphilis, for tuberculosis, and probably for gonorrhea; syphilis principally, because if you can detect syphilis in the mother you can do a whole lot to stop the disease.

In pre-school and school children in some counties, the examination for parasites is especially important. In Warren County we have very little hookworm, although every now and then we do find one or two cases.

Probably a complete examination should include the stool, and examination of these children probably should include a search for malaria. By a search for malaria, I mean a real search and not just glancing over a lot of slides. Probably in the backward child in school, examination of the blood should be made for syphilis.

In the supervision of midwives, syphilis, of course, should be looked for.

Dr. Smith includes life extension, covering a periodic health examination. In my opinion, at present at least, probably this should be left to the family physician, provided the family physician will make the proper examination. A lot of this work has been held up, has been discouraged by the fact that the family physician does not take it seriously when his patient comes to him. The patient probably has read something in a magazine relating to the fact that he should have an examination on his birthday. He goes to his family physician. The family physician says, "I know you are all right. You don't need an examination." That isn't the attitude that should prevail. If the health department can teach that family physician to take this man seriously and to carry on the examination as suggested by the American Medical Association, that could be well done by the family physician.

In these examinations also the laboratory plays its part. I don't think any of these examinations are complete without a urine examination, Wassermann test, and other examinations, according to what is found or suspected.

In older people, blood chemical examinations to determine the condition of the kidneys and the possibility of diabetes are important.

There is just one other function which Dr. Smith did not put down on his program. He has just recently done an excellent piece of work and that is in protecting the practice of medicine in the county where he is carrying on.

In Vicksburg, for some ten, twelve, or more years, there has been a negro ever there calling himself doctor. I think possibly he is a pharmacist. He got out some sort of patent medicine which he was selling through the mail. He used a crystal-gazing ball and some other apparatus. Some five or six years ago, the post office authorities tried to get him for using the mails to defraud. At the time, the post office inspector was through, we got a number of copies of the letters that had been sent out. The difficulty lay in the fact that everyone whom this man treated said he had done well for him, that he had not been defrauded. They made up their minds that they could do nothing at that time and just filed away the matter.

As soon as Dr. Smith heard of this condition—incidentally, the county health officer and the county society had tried to do something before and were unable to do anything—he went at it in the right sort of way. He took it up with the county attorney. The first thing we knew, this man had shut his office and so far as we know has stopped doing business. As Dr. Smith says, it is easier for the county health officer to do that with the jury than it is for the county society, for the reason that as soon as the county society goes before the jury, the defending lawyer says, "Here are all these doctors coming up here; they are just jealous of this man. He is making money that they want to make and they are trying to put him out of business." It is pretty hard to get a verdict from the jury.

The county health officer is not practicing medicine. His is a disinterested party. He is protecting the people. It worked out excellently in this particular case.

I enjoyed Dr. Smith's paper. I have enjoyed working with Dr. Smith. I offer congratulations to him and to the state health department.

Thank you.

Dr. H. L. McKinnon (Hattiesburg): I am not up to discuss the paper so much as I am to seek information. In my county we maintain a rather expensive county unit. During the war this unit treated venereal diseases, which meets my approval thoroughly. We had a male technician, trained under the supervision of our county health officer, who treated these indolent cases of venereal disease. Therefore, we practically rid our neighborhood of venereal disease. This man was let out from the unit and a female technician was put in. Then it became impossible for us doctors to refer our work of that character to this unit. I am not criticizing. I am merely asking for information as to whether that is the right thing to do.

During the war about 32 per cent of our men were sent back home because of venereal disease. It happened to be my privilege to be an induction officer in the army for a while and a dreadful amount of this stuff came under my observation. It was my painful duty to send a bunch of men back home as men who were incapacitated for regular army duty. I got the impression there that venereal disease perhaps was one of the biggest factors we have confronting us from a danger standpoint.

It is not the negro altogether, because the percentage ran very near equal as to whites and colored in my experience as a receiving officer.

A great many of these whites, as well as the colored, who have come under my observation are

not able to pay for treatment, and a busy man is normally not going to take time to treat those cases, especially to furnish them medicine.

Personally, I treat practically no venereal disease so it affects me in no way other than being a benefit to the neighborhood.

I should like to hear discussed whether or not it is the duty of our county health unit to have a man who is capable as a health officer, and to have under his care or observation a technician to do this work. We are very fortunate in our county in having a man who is very capable and who has carried on this work as well as it could be carried on. I don't think we have any criticism at all of our men, with the exception that in my opinion it is better if venereal work of this character is treated there. I certainly do not advocate treating those cases that can pay for treatment, but I do feel these indolent cases that are going untreated, going on and on until the disease runs its course, and in the meantime being scattered broadcast and endangering not only those with whom they come in contact but those people in our homes, should be treated. Just recently I had my cook examined and found a three plus Wassermann.

I should like to hear this idea discussed, whether the county units should take up these cases and treat them because the profession can't. They haven't time and naturally are not going to spend the money which is necessary to treat them at their own loss of time and money.

Dr. F. M. Smith (closing): I am very appreciative of the discussion given by these men, Dr. Lipscomb, Dr. Lippincott, and Dr. McKinnon.

With regard to life extension or annual examination, that is not as plain as I had intended it to be. I meant that the health department should do a work to accomplish results, but that all examinations should be done through the medical profession and those men who were thoroughly prepared to do that work.

Just at this time I refrain from a discussion of the venereal disease problem, or that part a health department should perform in the suppression of same. However, I am glad this subject has come before this body, and I suggest that we wait for the matter to be discussed later or after my old friend, Dr. Wenger, Director, U. S. Public Health Service, V. D. Clinic at Hot Springs, Ark., has read his paper, which, I am informed, will deal to some extent with this special problem. As I understand him and his recommendations, he advocates V. D. Clinics conveniently located throughout the state conducted by a clinician or physician who is paid for his services. That the health officer in this district

merely supervises the cases in a way somewhat similar to other communicable diseases. That is, after a patient quits his family physician, will not take further treatment from him, or if he fails to appear at the V. D. Clinic after having been admitted upon proper recommendations, the health officer sees that the private physician or to the V. D. Clinic. He does not give any treatment himself but only performs the duties of the health officer in as far as possible to prevent the spread of venereal diseases.

I again thank you for the liberal discussion of my paper.

THE RESPONSIBILITY OF THE MEDICAL PROFESSION IN HANDLING VENEREAL DISEASE PROBLEM.*

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The problem of venereal disease control and the responsibility of the physician is a many-sided proposition. This paper does not deal with the diagnosis, pathology or treatment, but is an effort on part of the writer to present the magnitude of the problem of venereal disease control from both the medical and economic standpoint.

Venereal disease constitutes one of the major communicable disease problems of the world, outranking in importance any other cause of morbidity and mortality. Very considerable inroads have been made on tuberculosis, and this may be considered as a rapidly waning disease. The fight made against tuberculosis, and the successful results that are everywhere apparent, are due to three great factors: education, prophylaxis and intelligent treatment. This is in a measure true in cancer control. Likewise, typhoid fever, smallpox and diphtheria have lost their terrors. Some progress has been made in the control of venereal disease, which is probably due to educational methods put in force during the World War.

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Infant morbidity and mortality rates are rapidly falling throughout the nation and this is due to public health methods, principally educational. Child hygiene has exercised a similar beneficial effect, and this is due to educational efforts by public health workers. In the adolescent and young adult period, the morbidity and mortality rates are also falling. This is largely due to the control of typhoid and other preventable diseases. On account of the reduction in the death rate in the life period prior to the age of thirty, life expectation at birth has been greatly increased. There has not, however, been a corresponding decrease in morbidity and mortality rates in the ages above thirty. As a matter of fact, it is not improbable that a smaller percentage in the young adult group reach old age. A large part of this is due to venereal disease. There are many added factors, such as the great strain of our high speed modern existence. It is not practicable to reduce this high speed, and while the universal introduction of machinery with its labor saving and efficiency producing methods is taking the strain off man's body, this gain is in a large part counterbalanced by the inroad of venereal disease.

The control of venereal disease is an extremely complicated and difficult matter since, at base, it means an attempt to control the vital primary urge of the human species. Venereal disease, in the main, is the result of illicit sexual indulgence. The added factors today, making for the increase in sexual indulgence, are the increased social liberty between the sexes, the automobile, clandestine alcoholism and the prevalent disregard for law. These factors affect all classes from the most ignorant to the most highly intelligent.

I shall not discuss the moral aspect of this question. Suffice it to say that prostitution, as a moral issue, has existed since time was young and will exist to the end of time. The problem as I see it resolves itself into one of prophylaxis. Prophylaxis

may be educational, namely, indoctrination of the principal of self-control and of obedience to the restrictions imposed by civilized society; secondly, the use of chemical and mechanical prophylaxis. Since it is extremely difficult to inculcate the principles of self-control, this should be attempted by thorough hygienic teaching from the beginning of the child's intelligence into the adult period of life. This hygienic instruction should proceed from the general, in early childhood, to the particular; the latter being attempted during the period of adolescence, continuing and becoming more specific during the period of young manhood and womanhood.

Mechanical prophylaxis is a matter of education. It is not necessary to dilate upon the method or methods of mechanical prophylaxis. Chemical prophylaxis is a matter of education plus opportunity. Every community for its own safety must provide means for efficient chemical prophylaxis. Treatment must be considered as a prophylactic measure in that it prevents acute and chronic-carriers. Every health unit should provide means for the treatment of those infected and here, also, the privacy of the patient should be safeguarded. The sooner the public realizes the enormous toll of life, health, happiness and property that venereal disease is taking, the quicker will it institute measures for their prevention. When we stop to consider that 20 per cent of the inmates of state insane hospitals are there because of syphilis, we can appreciate somewhat the enormous economic loss. I do not know what the annual expense of the state hospital for the insane amounts to but one-

fifth of this total expense is due to syphilis. This does not take into account the loss of time and reduced efficiency resulting from tertiary syphilitics who are not inmates of our asylums but nevertheless are reduced in efficiency or are charges upon their families. These include all cases of tabes dorsalis. It is impossible to compute the economic loss caused by syphilis, for the reason that we have no means of accurately determining the prevalence of the disease. An effort is made by our State Board of Health to compile such statistics but we all know how unreliable these are. Again, we, as physicians, know that syphilis is responsible for a large percentage of our abortions and still-births, and the consequent lowering of our birth rate. A survey recently made by the Mississippi State Health Department in co-operation with the United States Public Health Service gives the following startling figures.

This survey was conducted with the co-operation of Dr. Noblin, Health Director of Hinds County, Dr. Paul S. Carley, of the International Health Board, County Health Officer of Humphries County, and Acting Assistant Surgeon O. C. Wenger, as a representative of the U. S. Public Health States.

Up to date, 4,500 Wassermanns have been taken in Hinds and Humphries County. Approximately 3,500 of these Wassermanns were taken in and around Jackson, Mississippi. The other thousand were taken in Humphries County.

Of the 4,500 bloods, 2,276 were from female, and 2,224 were from male. The percentage of positives in the different age groups follows:

Age Groups	Male	Female	Average for Age Group No.	
5-9	6.2 per cent	5.6 per cent	5.9 per cent	57
10-14	9.0 " "	9.0 " "	9.0 " "	1,090
15-19	12.1 " "	9.5 " "	10.8 " "	836
20-29	24.3 " "	21.4 " "	22.8 " "	773
30-39	22.9 " "	19.0 " "	20.9 " "	490
40-49	24.1 " "	12.0 " "	18.0 " "	427
50-	13.0 " "	12.3 " "	12.7 " "	413
Average for entire 13.31 per cent positive.				
				4,500

One must keep in mind that these figures are based on positive Wassermanns on an unselected group of negroes. (Note: No diagnosis of syphilis was made on clinical evidence. Such cases were not considered.)

Many of these patients in the 19-50 year group who gave a negative Wassermann may have had syphilis but because of more or less treatment or the age of their infection, their Wassermanns were negative.

Therefore, these figures do not represent the actual and true incidence of syphilis among this group. The real incidence of syphilis can only be surmised. It is probable that for every positive Wassermann found in the age groups from 19-49, there is another case of syphilis that gives a negative Wassermann.

From an economic standpoint, gonorrhea stands close to tuberculosis and syphilis as a great social plague, probably the greatest. Gonorrhea affects not alone him who has the disease, but those who are dependent upon him for support. The annual loss of wages for work days lost through gonorrhea and its complications amounts to millions of dollars. Add to this the diminished earning power of the innumerable neurasthenics, chronic invalids and cripples whose condition can be traced to this disease and we have a total economic loss that is almost beyond computation. More important than this great financial loss is the relation which gonorrhea bears to marriage. To what an appalling degree women are made innocent victims through the men they marry, cannot be estimated. Years ago, the opinion was that 80 per cent of the women suffered from the effects of acute or latent gonorrhea. While the estimate might have been too high, it is undoubtedly true today that more than 60 per cent of all gynecologic surgical operations are the direct result of gonococcal infection and that gonorrhea has unsexed more women than all other diseases combined. No less startling is the role of gonorrhea in the causation of sterility and depopulation. In the

male, sterility is produced most commonly as the result of epididymitis; latent gonorrhea of the prostate and seminal vesicles may accomplish the same result through the chronic infection and deterioration of the seminal fluid. In the female, childlessness most frequently depends upon the presence of metritis, cervicitis and salpingitis, all of which develop after gonococcal infection. Of all the cases of childless marriage, the husband is the sterile member in 40 to 50 per cent of cases. In the production of blindness, gonococcal infection stands high. Ophthalmia in the adult is not rare. It is produced by carrying the infectious discharge to the eye, either by the hand or through instruments, linens, etc. In infancy, the infection usually is derived at the time of passage through the infected vagina of the mother, or shortly after birth, through contamination by dressings, towels, or the infected hands of doctors or nurses. According to the National Committee for the Prevention of Blindness, 19.5 per cent of the total number of pupils (4,151) in the 48 schools for the blind in 1922-23, were sightless through ophthalmia neonatorum. Bearing these facts in mind, we feel justified in designating gonorrhea as one of the most formidable and widespread of all the dread evils to which mankind is subject.

Every effort should be made to educate the public on this subject and to tear aside the veil of mystery which yet envelops venereal diseases in many places. The fight against venereal diseases, the fight against cancer and the fight against tuberculosis are the three problems which can be solved only through the cooperation of the physician, the public and the state. The physician must realize that the responsibility of initiating a program of education lies with him. The public must be educated as to the ways and means for combating venereal disease and must be made to realize the enormous burden placed upon it as tax payers in maintaining state hospitals for the insane, the blind, and institutions for the care of cripples.

ples and the feeble-minded. Employers must be made to realize that acute and chronic venereal disease among their employees result in lost time and lack of efficiency with a consequent decline in return from their labors. When these facts are thoroughly understood by the public, it will demand that the state take the steps necessary for the control of venereal disease. By such steps I do not mean the simple passage of laws against prostitution as this has been repeatedly done in the past. What I do mean is that a definite program of education be started in our schools, in our civic clubs, by our social workers, by employers of labor and in every possible manner of disseminating the facts of the devastating effects of venereal disease; that clinics and prophylactic stations be maintained in all communities. Our law makers have too long thought that their duties merely require the passing of laws against prostitution and that when the houses of public prostitution have been closed, prostitution no longer existed and that in consequence thereof, venereal disease is no longer possible. The fact is that the inmates of the houses legally closed are plying their trade in hotels, restaurants, on our streets and in our parks. Since, in our present state of civilization, prostitution cannot be eliminated as a social factor, the only recourse we have is one of education and prophylaxis. The responsibility in this matter is, as has already been pointed out, threefold. The State Board of Health, the general public and the medical profession constitute the legs of the tripod which must support any program of venereal prevention and eradication. If any one of these is missing, the entire combat against venereal disease must fail. If all three resolutely and cooperatively bear their respective burden of responsibility, success will come.

Upon the State Board of Health devolves leadership of the general public and the medical profession. Its duty is to awaken in the public mind a realization of the

gravity of the problem and the necessity for fearlessly attacking it. It must afford expert advice and financial assistance in the establishment of prophylactic, diagnostic and treatment centers. It must popularize these with the general public; it must divest attendance at these clinics of any moral or social shame; it must make of them educational foci for infected individuals to the end that they cease spreading their infection. In cooperation with the State Department of Education, steps must be taken for the training of the youth of our State in continence and the avoidance of all infections, particularly those which are spread by sexual contact. This portion of the fight must be carried to the fathers and mothers of every community because, after all, the great lessons of life are best taught in the home. It must help the medical profession, already burdened with many civic responsibilities. Regretfully, it must be admitted that many physicians fail to realize the terrible inroads which the venereal infections are making into our economic, social and moral welfare and their duties in the attempt to stay what amounts to a veritable pestilence.

The general public must be brought to the realization that venereal disease prevention pays dividends in health, in money and in happiness and, having learned this great lesson, it must aid the State Board of Health, the State Educational Department and the profession of medicine in the work. Civic organizations of every character must take a hand; the better the community is organized against venereal disease, the sooner will it be conquered.

In this warfare, the medical profession furnishes the shock troops. They are the first to meet the enemy; they first engage him; they finally defeat him. The doctor has fought venereal disease since the beginning of time; this has been a lone fight; it is time that he be helped. This can best be done by the establishment of clinics which shall care for that time-consuming, expense-creating, non-paying class of pati-

ents. This relief will give the physician more time for the hygienic indoctrination of his clientele along the lines of venereal disease prevention.

Let us not be too optimistic as to immediate results; faith will move mountains if given time in which to operate; when we fight an enemy as deeply and widely entrenched as the spirochete and the gonococcus, it cannot be evicted in a year; ignorance, superstition and sloth die hard; they must be overcome. Results will come slowly at first but gains will pile up in the geometric ratio. In the words of Jefferson Davis, "If we but will it, we will be free."

DISCUSSION.

Dr. W. C. Rucker (New Orleans): This paper has many things which merit sincere congratulation. Among the outstanding things in this regard is the attitude of mind which Dr. Van Alstine has taken.

About twenty years ago a rather sharp line was drawn between public health and clinical medicine. The public health department felt they were quite sufficient unto themselves, and for a time being, they were because they were dealing with diseases which had been dissolved into their respective groups. For instance, a clinician told us the difference between typhoid and typhus. A great many diseases had been accurately marked out. The control of diseases, which was the outstanding thing at that time, was in a large way an engineering problem, and we could go off by ourselves and handle these problems.

The day has come when men who are thinking in public health work realize that we must get back to the bedside as a starting point.

Dr. Van Alstine has harmonized in his own mind the attitude of the clinician and the public health worker. A most important factor in this work which we have in the control of the venereal disease, the most outstanding public health problem there is in the world today, is the control of the venereal infection. I think of you who are practitioners of medicine recognize the fact that you are seeing cases every day, which, while not at that moment venereal diseases, were at time venereal diseases. You are seeing your clientele reduced in health, in efficiency, and in welfare and happiness by reason of the sequela of venereal infections.

It is a happy thing that Dr. Van Alstine has united for us these two and brought them to-

gether. When we come to attack this problem, we have essentially a question of education first of all.

I believe where we have to start in education is in the education of ourselves. At the Marine Hospital, of which I am in command, we have the officers' training school. We receive there young men who are just out of college. They come to use from all over the United States. These men are hand-picked, and it is surprising to me to find how few of them have any scintilla of a public health attitude. They have been well trained in clinical medicine and all its branches, but when it comes to thinking in terms of public health, they have not arrived at a place where they can do it.

Next we will have to proceed to the education of the public. I think there has been a terrific amount of misdirected effort in our education of the general public. We go on the principle that if we tell them that thus and thus is so they have learned a lesson, that they will go out and abide by it. I haven't a doubt that every person in this room was told carefully how to do square root, but I don't believe there is a dozen people who could do a problem in square root, and I do not believe there are three who can tell me the algebraic basis of the thing.

If you intelligent people have so well forgotten the things that were drilled into you when you were in school, what can we expect of the general public when we stand up and deliver a very high sounding oration to them about the protection of their health and the avoidance of illicit sexual intercourse and the avoidance thereby of infection?

The allergic bases then are nutrition, possession and procreation. Of course, we can handle nutrition by economic measures, the full dinner pail and everything that goes with it. We can handle it by full hygiene. We can handle the things that go into a man's body through the public health work which is done by the paid employees of the community.

Possession comes to us through economics or comes to us through industrial hygiene. That is where we have our safeguards thrown around.

Procreation brings to us social hygiene. We must admit that divested of any moral issue illicit sexual intercourse will go on, that there will be a certain number of people in the community who will not resist the procreative urge, and we must admit, I think, that this is where

our grave danger lies in the infections of syphilis, gonorrhea, coccidioidal and granulomatous infections.

At base, this is a problem in economics. It means that if the people are in good economic condition, they can afford to surround themselves with prophylactic measures and they will have time to secure education beginning at the first showing of intelligence until they have gotten well into the adult group. It means conversely that the control of venereal infections will increase the economic condition of the community, and this applies to everybody in the community. Anything which improves the condition of the community in an economic sense improves the condition of the practicing physician. The practicing physician who co-operates in the control of venereal diseases is not only helping his whole community, but he is helping himself in a greater measure than he could in any other way.

If the physician is going to get along, be prosperous, be happy and advance himself, he must have some leisure for study. He must be able to afford a certain amount of recreation. He must be able to get the ideas of other men and advance himself. If he is relieved of the burden of treating an enormous number of charity cases of venereal disease (and the public will be educated in this matter), he will get paid for what he does and thereby he will have leisure to do some of these things.

Dr. E. H. Linfield (Gulfport): The essayist and Dr. Rucker have covered the subject very fully. This little idea was handed to me by a patient in my office the other day, a young man who had attended some of these summer camps in North Carolina for two or three years where the director of the camp and Y. M. C. A. men in conjunction had given lectures on the prevention of venereal infection. He had come home and I was treating him in my office for venereal infection. He looked up in my cabinet and saw a lot of these steel instruments which I have. He asked what they were. I described to him what they were. He said, "If those fellows in camp would wave some of those iron rods around that I have seen here instead of shooting all that wind to us, they wouldn't have had to open their mouths."

I think we have to look upon a patient who is infected with a venereal infection as a sick individual just as though he had pneumonia, typhoid, or some of the other infections or contagious

diseases with which we come in contact frequently.

I don't think we should try to tell this man he has been a law breaker. I think we should encourage him to do better, go out and tell the other fellows what has happened, and teach them co-operation so that when they are infected they can be cured by competent co-operation with their doctor.

I read a paper two years ago in Jackson along this same line. I brought out in that paper that I thought education was primary in the prevention of venereal infection, that education should start with the child in the home, and that the parent should take the child off to one side and talk to him or to her and teach him or her the fundamentals of the procreative function when they are attaining the proper age. I also thought that in the schools the two sexes should be separated, and that competent individuals, men and women, should deliver lectures to these children in school on these particular functions and the grave dangers of overstepping the limits and getting out of the traces; that is, from the standpoint of the danger of infection.

Dr. Frank L. Van Alstine (closing): I appreciate the discussion. I am sorry the time is so short, because I wanted to finish reading my paper, not because I am particularly proud of it, but I wanted to try to drive home what I thought was necessary.

I think education along these lines should begin in childhood along general hygienic measures, making it more specific as they reach the adolescent age, and on into young womanhood. It should also be taken up in the public schools. It should be taken up by the civic clubs; it should be taken up by every agency that possibly can put the question across. There is no other way of combating it.

We have had doctors for many, many years. Instead of there being less venereal disease today and fewer ravages, there are more. My office would be swarmed twenty-four hours a day if I could give my time to even the treatment of gonorrhea alone. Applicant after applicant comes in, waitresses from restaurants, workers in hotels.

Passing laws against prostitution means nothing at all. We have no open houses of prostitution in Jackson, but practically every hotel and every restaurant is an open house. They accept you on the street or while walking in the parks; so law means nothing.

A PRACTICAL CHILD HEALTH PROGRAM FOR A RURAL COUNTY.*

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In discussing this subject one comes to face the fact that the word "practical" in the title is an ambiguous term. What might be considered a practical program by one health officer might be thought impractical by another. Of course, the capacity for work varies with individuals. Some directors of public health organizations may find themselves so loaded down with the details of their work that they haven't the time to get around to all the duties that call for their attention, while others may find it difficult to find things to do to take up all their time. It is likely that a well thought out program will tend to make more phases of public health work practical for those of the former group and possibly do something to arouse those of the latter group from their peaceful lethargy.

Too, the question of the size of the personnel of an organization will be raised as a factor influencing the practicability of the program. Unquestionably, within certain limits, that will be a factor. However, with a well balanced organization, it is thought that the size of the personnel should influence more the volume of work than the type and character of it. What is meant by a well balanced organization is that which has as a minimum staff, a physician, a sanitary inspector, a nurse, and a clerk.

Therefore, at such a basic organization the rough outline of this child health program is more particularly directed. Nothing new is offered. Certain procedures that have proved practical elsewhere for getting results are suggested and emphasized.

*Read before the Section on Hygiene and Public Health, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

A child health program naturally is divided roughly into four periods of the child's life:

(1) School, (2) pre-school, (3) infant, and (4) pre-natal.

Since school children are collected conveniently into large groups they are brought as a rule into closer contact with the health department than at any other period of their lives. The health department has certain aims in view in working with this group. First, education in health matters is promoted through the teachers and pupils. Second, physical examinations are given to the pupils and teachers with the idea of locating defects and securing their correction. Third, active immunization against such diseases as smallpox, diphtheria and typhoid fever is promoted.

To get much education in health matters over to a child, to get many of his physical defects corrected or to get him immunized against the diseases mentioned he must be aroused by means of some concrete stimulus. The best means that have come to the attention of the writer for stimulating children are the promotion of what are known as blue ribbon or health contests among the schools. The blue ribbon idea probably originated with the Child Health Demonstration conducted in Mansfield, Ohio, a number of years ago. It has since been used and improved upon by the child health demonstrations promoted by the Commonwealth Fund of New York. The blue ribbon seems to appeal greatly to the rural child. It is given him as a health badge after the fulfillment on his part of certain requirements. The schools compete for prizes such as silver cups, the one securing the highest percentage of the student body with blue ribbons winning.

The requirements for a blue ribbon, or health badge, are as follows:

1. Evidence of satisfactory school work.
2. Reasonable co-operation in the practice of health habits as listed on a daily health record for the schools.

3. Satisfaction in behavior and attitude in the school environment.
4. As to health status (a) freedom from remediable defects and from chronic diseases which have not received the maximum of treatment; (b) immunity against smallpox, typhoid fever and diphtheria.

The contests should open on a certain date and close on a certain official date. A parade of all blue ribbon children at the county seat on a given date after the close of the contests gives an extra impetus to children qualifying.

In the writer's experience such a health contest, as outlined above, creates a tremendous interest among school children in health matters. If the work is intelligently directed with the co-operation and interest of the teachers, the interest grows from year to year.

During the vacation period, after the close of the school, is probably the best time for putting special emphasis on work among the pre-school and infant groups and clinics may be organized in the different communities of the county at which children are examined, mothers are instructed in feeding well babies, and vaccinations are given. Such clinics may be held at the office of the health department on certain days throughout the year. They may also be held on occasions in connection with school examinations.

With the pre-school group interest may be created by awarding blue ribbons, or health badges, to those children who have fulfilled certain requirements. Usually the requirements are a modification of those for school children. They may include (1) evidence of birth registration; (2) observation of certain health habits, such as proper feeding, required number of hours of sleep, rest periods, etc.; (3) freedom from remedial defects and from chronic diseases which have not received the maximum treatment; (4) immunity against certain infectious diseases.

Special emphasis should be placed on immunizing all children over six months of age against diphtheria.

Scales should be placed conveniently for mothers to weigh their babies and record the growth and development.

As far as possible, all pre-natal cases should be located and urged to seek the care and observation of physicians. Of course, the physician should see that urinalysis and blood pressure determinations are made. Wassermann tests on mothers should not be neglected.

To carry on a child health program the co-operation of physicians, dentists, and teachers must be had. If the enthusiastic interest of teachers is secured, usually the children will look after the interest of the parents. Especially is this true in school work.

DISCUSSION.

Dr. F. J. Underwood (Jackson): I am inclined to become rather reminiscent this morning and recall that only a few years ago, really a comparatively short time ago, the public health program in this state consisted of a hookworm campaign solely. There has been a most remarkable and eventful evolution from a simple campaign for the eradication of hookworm to this splendid outline that Dr. Smith has given you this morning.

A few years ago in discussing programs of this kind we had a similar attitude to that of the policeman on the street of Jackson a few days ago when he stopped an automobile and said to the lady driver, "Don't you know anything about the traffic rules of this city?"

She said, "Very little, sir, but if I can help you I will be glad to do so."

The child health program and the public health work in Mississippi consisted principally of locating the prettiest baby. I made enemies then that I shall always have because of selections of that kind. The health standard we set now really mean something. For a child to obtain a health button or a health ribbon means that that child must measure up to a certain required standard. In one or two quarters there has been some disposition to let children pass on promises that they will have the corrections made shortly, or in order to please the mothers there has been a little laxity along this line in Mississippi. There should be

none. We should hew to the line and make the health button or health ribbon mean something. It is possible, and we are doing it right along, to lessen the burden of school work and the more or less confusion brought about by carrying out the school program.

Much of this work is being done, and more of it could be done, by carrying out an adequate pre-school program. We can get smallpox vaccinations, diphtheria immunizations, postural defects, orthopedic defects, and a number of things out of the way before the child enters school. Then the child will not be hindered and hampered by these defects and lose the time required to correct them during the school life.

It was very surprising to me to note the interest of the teachers in the pre-school program. Not only the physicians and the health workers, but the teachers themselves are realizing as never before the importance of real, honest-to-goodness pre-school work, a pre-school program that means something.

With well organized pre-natal infant, pre-school and school health programs, we have nothing to worry about so far as the future of the race is concerned.

I was in Illinois a few days ago and had the pleasure of addressing the Peoria Medical Society. There were about 130 men present. I told them about our work in Mississippi. They were surprised and astonished to know that a Southern state is doing the work we are doing here. I outlined the program and told them the progress that had been made during the past ten or fifteen years. That state has one full-time county health department at the present time, and on account of the local political situation, it is about to be discontinued.

I wish to congratulate Dr. Black on the presentation of this splendid outline. It is classical. We regretted very much to lose the services of Dr. Black. Our loss is Tennessee's gain, but we found that we could not compete with the commonwealth people in combination with the Tennessee State Board of Health on the matter of salaries. The doctor went up to Tennessee to Rutherford County as assistant director of child health demonstration at a salary of \$1500 more than a health officer receives in Mississippi. They have done wonderful things there. Mississippi feels proud of what it has done for Tennessee in the way of giving them their leaders—Dr. Black, Dr. Harrison, Director of the Health Department of Shelby County, and the city health commissioner of Memphis. We have done a great deal for public health in Tennessee for which we are very proud.

Dr. H. C. Ricks (State Epidemiologist, Jackson): I am glad that Dr. Black got around to the sub-

ject that he started to discuss. He said he was going to discuss a child health program, and I knew after he read his paper and I heard his discussion that he was talking about what these full-time health departments are doing in the State of Mississippi.

Comparing the health ribbon with the health button, I believe it would be a wise thing for Mississippi to change the health button to a health ribbon, when I think of what happened in Lauderdale County during the presidential campaign. Some families there had two girls looking after their children. They came in with these buttons on their coats or head gear, and the people said, "I don't believe we want you to work here."

They asked, "What is the trouble?"

"I will be doggone if I am going to employ you when the health department has gotten into politics supporting Hoover."

I believe this health ribbon would be a good thing for Mississippi to adopt.

As to the personnel of the department, I am sorry Dr. Black did not bring out especially in his child health program that a departmental hygienist, under the direction of the health officer, would be a very valuable asset. In fact, from what I have seen of the work of the departmental hygienist in this state, a well trained individual, I think the departmental hygienist can be worth as much in the control of the remedial defects that occur in school children as any other member of the organization.

The control of communicable diseases in children (and that is the object, I believe, of health work) is one of the subjects in which I am primarily interested, if I am interested in one more than another.

We like to think of the application of a program as it applies to our own locality. I think the application in Mississippi will apply to other Southern states from the records I have been able to get from some of them, and certainly it will apply in the entire North American continent. That is, if we are to control (and I want to stress this point) diphtheria in this North American continent, it must be done in the age group under five.

The State Health Department Bureau has vital statistics that I have been able to get hold of, and they show that in 1928, of 158 deaths from diphtheria in Mississippi, 95 of those occurred in children under five years of age. We must stress the pre-school age more than the school age if we are going to reduce our diphtheria death rate or our disease rate in this state. The same thing applied in 1927 and 1926, which were the only

years that we had definite records as to the incidence of disease by age groups. This, notwithstanding the fact that we have many more children living in the age group five to nine than we have in the age group under five.

Smallpox and typhoid, of course, occur more in the age group of five to nine and ten to nineteen. Those are the highest age groups for typhoid and smallpox, so the vaccination against typhoid and smallpox should be stressed in the school age group and not so much in the pre-school group.

I want to stress this point about doing a Wassermann on the expectant mother. Dr. J. Richard Williams says that no man has completed his obligation to his patient until he has had a Wassermann test done.

The next thing I should like to ask Dr. Black is, in putting on a purely child health program, not as a county health department as we have in Mississippi, what would the population of the county have to be to make it reasonably practical to put on this program in?

Dr. F. M. Smith (Vicksburg): I enjoyed Dr. Black's paper very much. As to where he lived and passing the word to the neighbor and how long it took the neighbor to get it as he gave it to you in his opening remarks, somehow, somehow, the message of pure public health and the organization of an all-time health department in the rural county has gotten to Black, and where it came from we shall not endeavor to find just so long as it reached him.

In making this program he has set out certain requirements that we feel are altogether proper. We do raise a question as to the obtaining of this blue ribbon on these two points: the school record or grades of a child in school, and the child's behavior. Those are admirable things and in a way may be brought under the head of mental direction. I am wondering, however, if they should be in the uniform requirements for a health button or a blue ribbon.

I like the idea, regardless of whether we have a health button or a blue ribbon. It is not so much the emblem but what it stands for. A rose by any other name might be just as sweet. Personally, I like very much the health button with the name of the state written on it endorsing the child's health.

The thing that appeals to me is that there should be a uniform requirement, that we in one county should not be giving health buttons with a minimum requirement, while in another county children are receiving these buttons when every requirement is made. I believe the requirements should be uniform and high, and as near physical perfection as we can get them—having a success-

full scar for vaccination, having antitoxin with a negative Schick test, etc. This should be worked out and submitted to the various local health departments. Then when we get a blue ribbon in Warren County, it will signify the same thing as it does in Lauderdale.

Dr. G. W. Googe (Rienzi): With reference to the uniformity of the program and the requirements for obtaining a health button, I wish to say that I guess we have about the lowest standards for obtaining a health button in Lauderdale County as any county in the state. We realized we could not do everything the first year. It can't be done. We had to work our program in cooperation with the superintendent of city schools. He approved or disapproved. We approved or disapproved. Finally, we worked out a program that was acceptable to all.

We can't have uniform standards on the health button or the blue ribbon problem. The same shoe won't fit every foot. This is our first year for a health program in Lauderdale County. Next year we will move up a notch and do a little more effective child health work.

There is one phase of the child health program that has not been mentioned which seems to be as essential as any that have been mentioned and that is with regard to sanitation. What profit is it if you remove the child's tonsils or immunize him against diphtheria and then have him die from typhoid fever or dysentery within a month's time? It seems to me that if we are to have a well-rounded child's health program we must include sanitation, not only sanitation of the home, but sanitation of the food supplies.

I have enjoyed the discussion. I have heard it time and time again, but still I always enjoy Dr. Black's discussions. I think he exercises common sense and keep his feet on the ground. If we are to continue to make progress, as we have, we must keep our feet on the ground and do the things that we can do. We must not set our aim too high. Of course we want to shoot at a star, but we should put on a common sense program and work and obtain results.

Dr. A. L. Emerson (Hernando): We do part-time county health work in our county. There is no one here who is more pleased to see Dr. Black than I. Shortly after Dr. Black sent out his message, as he used to send it out, he came over to our town to teach school. The board saw him walk up there that morning, nothing but a little boy. One of the men on the board said, "Dr. Emerson, is this the teacher you recommended to teach our school?"

I said, "Yes."

He said, "We didn't want a boy. We want a man to teach this school."

I said, "Well, give him a chance." Do you know that it was all I could do to keep those trustees from firing him right at the start? I said, "Now, that will not do. Give him a chance and if he doesn't make good, then fire him." Before long we had one of the best schools we ever had in that town.

I have one of the hardest counties in the state to control. I live in the extreme northwestern part of this state, right on the edge of Memphis, where we have all sorts of diseases drifting out from the city, as well as blind tigers, and everything else, with which we want to come in contact. It is a problem to keep these diseases under control.

As a part-time county health officer I went to work up there to examine every school child in that county. While we have a disadvantage in being close to Memphis, we still have an advantage. There are several specialists in the city of Memphis. When I got ready to make my school examinations I said to the specialist (eye, ear, nose and throat man, heart and lung specialist, and teeth), "I want you to come down and examine the children in a certain school on a certain day. If you come down early, we can get through by one o'clock and that will give you sufficient time to get back to your office in the afternoon." They are glad to do it.

I line up an eye man, a nose and throat man, a chest man, and a skin and scalp man, and start those children through the line. By the time they get through the mill they are pretty well examined.

Each specialist has a secretary who puts down his findings, and when that child has arrived at the end of the line, we have two secretaries who fill out these blanks. The child takes the blank home to his parents, and every parent in my county for the last four years has a correct diagnosis of the defects of his child.

It is some job to carry that point out. I have been begging my board of supervisors for a nurse to carry out the instructions that go to these people who do not know what it means to have a health child.

Our county demonstrator receives \$600 a year, and you all know what the part-time county health officers gets without asking.

Dr. H. R. Hays (Laurel): I have enjoyed Dr. Black's paper very much. We are undertaking a similar program in Jones County. I can appreciate what the contest means.

When we first made our examination of forty-seven rural students in eight schools and eight

schools in the city, there were very few children who could get a health button. Very little effort was made to bring about corrections. Then we started a contest.

I got the South Mississippi Fair Association to agree to give a pass to every child who would receive a health button. I published the announcement. Then we got merchants of the town to agree to give to the child who was selected at the South Mississippi Fair as the healthiest child in the county a prize. There was a prize for the boy and one for the girl selected. We published the list of prizes. Then we began to urge the correction of defects, because a child could not enter the contest until he received a health button. A child had to be physically perfect or have every defect eliminated and be immunized against the three diseases—smallpox, typhoid fever (if under ten years old), three shots of toxin-antitoxin—before he could receive a health button.

In one school in Ellisville, not a single health button was awarded when we started this program. Since then fifty-seven have qualified so far for health buttons. Competition is keen, reaching out into the smaller districts, until now they are coming in to get their defects corrected.

I was struck with one little child, a child of a blind father whose mother was dead, and who needed to have his tonsils out. This child was sent by the teacher with his little basket in his hand containing his night clothes to walk three miles to the hospital to have his tonsils removed. Another teacher picked up the child and took him to the hospital and later a piece was written up in the newspaper concerning him.

One of the things that have been discussed is the low standard of a health button. I think a person is either a fit subject for a health button or he is not. I think we should never temporize. I think we should never give a health button unless it means something, because if we do, certainly we haven't anything to work forward to. If we let the educational people or anyone else dictate the standard for these buttons to us as health men, it will always be something that is not decided. If we demand that they reach the standard, they will work and have all their defects eliminated.

I would rather have five children who are perfectly healthy in the county and have the rest of them working to that goal rather than to have 150 or 200 children with health buttons.

Finally, we are going to have a big parade. No child who hasn't a health button can get into the parade.

Dr. Searle Harris (Birmingham): First, I want to say that I had the privilege of spending two

days last year in Murfreesboro. The thing with which I was most impressed while there was the very cordial co-operation of the medical profession with the men of the commonwealth and the men who were engaged in this rural child welfare work. To my mind, that is the most important part of the public health work or the most important thing in the development of the race, you might say.

There are some thing that Dr. Black did not mention. Of course, he could not discuss every phase of this child welfare program. He mentioned the matter of diet and he also mentioned the matter of weight. Of course, there are a great many important phases to this work, but the most important phase of the work for protecting the child, and later the adult against disease, is in the matter of the nutrition of that child.

In the first place, there is the child of pre-school age. McHolland insists that ninety-five per cent of all children have rickets and that a great many of the crippled children whom you see have been the result of improper feeding during the first year of life.

Of course, it means a great deal of work. The underfed child is potentially a subject for developing tuberculosis. The overfed child is going to be the diabetic and the nephritic of the future.

These children should be taught early in life with regard to the important matter of weight. The overweight, backward child in school very often is a case of hypothyroidism. If this work is begun early, we can catch the cretins at a time when the addition of some thyroid to their daily diet will bring them out of that condition and they will do better work in the schools. Furthermore, as they grow older, we can catch the hyperthyroid cases, those who are underweight.

Another question is that of the standing of the children in school. In the rural work of Jefferson County, this matter of nutrition is stressed particularly. They have found that undernourished children when fed properly and given more milk, eggs, and fruit, improve in their school work very rapidly, and also improve in their health work.

We found in making food examinations in Germany after the war that the children suffered more from lack of nutrition than anything else, and that every disease—diphtheria, scarlet fever, tuberculosis, and every other disease—could increase among the children. The child death rate increased enormously due to the lack of nutrition.

I believe that should be added to this child welfare work together with McCullom's dictum: "A quart of milk for every child, one raw fruit, and one or two green vegetables every day, in addition to the other food."

Thank you.

Dr. W. D. Beacham (Hattiesburg): Forrest County presented to the world in 1926 the first school with every physical defect of the child corrected. Last year we presented Hattiesburg, the only city in the United States with every white child in the grammar schools having every tooth filled. Two weeks ago we presented the first rural district in America, District No. 2, where every child from the primary grade through the twelfth grade had every tooth filled.

I wish I had time to tell you something of our nutritional work in Forrest County. On behalf of Dr. W. W. Crawford, President of the State Board of Health, and myself, if you would like to know something of our work, we would be glad to have you visit us.

Dr. J. B. Black (closing): I feel very humble, I assure you. I wish to disillusion the minds of some of you regarding the fact that this program I have outlined to you is just set off by itself and is not connected with full-time health organization. These are just some suggestions that go along with our health program which is carried on by a full-time health organization. The larger that organization is, the better you can carry it on and the more you can accomplish by it.

As far as sanitation and the requirements for the blue ribbon are concerned, those will vary, of course, with the condition which you have to meet. We have started a contest among the Negro children. This contest, of course, is a modification of the one we carry on with the white children. Since the getting of the defects corrected among the negroes is something that is hard to accomplish, we have added some particular requirements to take the place of that. If they have a sanitary method of disposal of excreta in their homes and have their teeth corrected and have had inoculations against typhoid fever, diphtheria and small pox, we give them a button for fulfilling those requirements. We do not say that he is a perfect child. We are not exhibiting him as Exhibit "A," the healthiest child of America. If they fulfill certain requirements, they are entitled to certain awards.

No badge or blue ribbon should be given to a child until he has fulfilled those requirements which you have set forth. You do not want to be quick about it at all. You want to put your foot down hard when someone tries to slip over a child who hasn't fulfilled the requirements of the contest.

Also the question of the teacher and the status of the child in his work in school has come up. If you do not get the teacher's cooperation, you will get nothing done in your contest. If you don't take the matter up with your council and have them offer some suggestions, you are making a great mistake, because if you think you know all about running one of these health contests yourself, you will become disillusioned very quickly after you start. Some of these teachers have some very practical ideas about the matter and they will have some very practical suggestions to offer to you in carrying out the program.

We let the teacher pass on the question of the child's standing. It is not often that a child is turned down because he has not made his grades. Usually the teacher overlooks that matter, but if he is a dullard in school and takes no interest at all, that is the best sign that there is something wrong with the child. Therefore, we make a thorough investigation of those youngsters to see just what the trouble may be. By paying attention to that phase of the work, many children are brought back to us who would have been overlooked in the first examination. Some defect in that child may have been overlooked which may be the cause of his backward tendency.

Of course, as I said in the beginning, the requirements of the contest should meet the conditions of the county. The larger the organization the better and the more things you can include in the requirements.

The badge is quite important. It must be attractive. It must appeal to the child. It must be something that he will wear with pride. It seems to carry with it a feeling of decoration, that he is being decorated for some confidence that he has carried out. This is just a suggestion. Use anything that will make that child get busy and work in your contest. This is just a happy suggestion that has been offered and is one that seems to get results.

THE RECENT EPIDEMIC OF INFLUENZA AND ITS COMPLICATIONS.*

W. L. STALLWORTH, M. D.,

COLUMBUS, MISS.

To report on the subject of influenza at the present time is essentially to write the history of the epidemic of 1918-1919. At present the reports and literature on the pandemic of the winter of 1928-29 are very meagre and it has been very difficult to gather data for an intelligent report.

Regardless of opportunities that have presented themselves additional knowledge acquired about this disease has been largely of a negative character.

The great nations of the earth have not been organized for war, nor have the victims of the disease been in segregated areas such as we saw in 1918.

An immense amount of work has been done by the medical departments of the Army and Navy and the Public Service and by individually competent observers. The factors of complicating pneumonias have been more definitely observed and experimental studies on contagiousness and modes of transmission have been carried out.

At present little that was unknown has been unfolded. Save for a few facts of epidemiology, the doubt cast upon the specificity of the Pfeiffer organism, the addition of serologic and immunologic observations, and knowledge of the nature of certain complications that which is written today must in a measure repeat the observations of those who have lived through and observed the previous epidemics of history.

Authentic and detailed accounts of epidemic date from 1510 and include descriptions by such famous physicians as Willis

*Read before the Section of Medicine, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 14, 1929.

and Syndenham, but no doubt certain plagues that swept the world centuries before were influenza. Epidemics are recorded in the sixteenth, seventeenth and eighteenth centuries. In times more recent pandemics have occurred in the years 1930-1831, 1836-1837, 1843, 1847 and 1848, 1889, 1892, 1918-1919, 1920, 1926 and the present epidemic. The two last severe pandemics 1889, 1892, 1918-1919 had their origin in Russia spreading rapidly eastward, the 1918 pandemic with the greater rapidity. The pandemic of this year supposedly had its origin in Russia, but contrary to past performances spread in an easterly direction. It appeared in California early in October, 1928, spreading rapidly across the continent, the number of reported cases reaching the peak December 22, 1928. Comparing the present epidemic with former epidemics that have occurred in recent years, it may be seen that at the peak week the mortality of the 1928-1929 epidemic was nearly twice as great as the corresponding week of the 1926 epidemic.

The excess mortality rate of the 1920 epidemic was about three times the present excess rate that of 1918 about ten times the present excess rate.

From these statistics we gather that the virulence of infection in this recent epidemic was not as severe nor the complications so numerous as in the past epidemics. However, we probably would have regarded the past epidemic more seriously had it not been for the overshadowing effect of the 1918 pandemic.

In Mississippi from the month of September, 1928, to February, 1929, inclusive, the number of reported cases totalled, 192,578, with 2,143 deaths. The largest number of cases reported was in December, 1928, with 108,860 cases reported. This report is possibly exaggerated, as many cases of common colds or ordinary la grippe were probably reported as influenza.

It is also well known that influenza exists to a greater or less extent at all times among all peoples in every country. Since the germ causing the disease has not been satisfactorily demonstrated it is necessary to depend on symptoms for a diagnosis.

CONFERENCE ON THE PRESENT INFLUENZA EPIDEMIC.

The conference called by the Surgeon General to discuss the influenza epidemic met in Washington, D. C., January 10. It was attended by State and local health officers, research workers, and others interested in the problems of influenza.

Although the meeting did not bring to light any new or unusual information regarding the disease, (it was not expected nor was that its purpose) it provided an opportunity for experience health workers to set forth concisely their views on how best to meet the problems with the means at hand.

Three committees made reports, namely, the committee on epidemiology, the committee on preventive measures, and the committee on research.

REPORT OF COMMITTEE ON EPIDEMIOLOGY.

The features which have distinguished influenza in its typical outbreaks, such as those of 1918 and 1899-90, are:

1. A great increase in the prevalence of illness of which the usual symptoms are: fever, of more or less sudden onset, of moderately high range, and of only a few days' duration; aching of the body and limbs; inflammation of the upper respiratory passages; and marked prostration. In its manner of spread this disease has the characteristic of a highly contagious infection, transmitted directly from person to person.
2. Coincident increase in the prevalence of pneumonia, developing apparently as a complication of a certain proportion of the influenza cases.
3. A rise in the general mortality rate, due largely to increase in deaths certified

as influenza or pneumonia. These deaths characteristically show an age distribution different from that of normal times, in that the proportion of young adults is increased.

4. In any given locality the epidemic develops and runs its course rapidly, so that its duration, even in a large city, is a matter of not more than five to ten weeks.

5. The tendency is to rapid and wide extension, different communities being attacked in such quick succession that the spread across a continent requires only a few weeks, and where the disease becomes pandemic it travels around the world within three to six months.

For the statistical and epidemiological study of the epidemic we recommend:

1. That the Public Health Service continue and extend its activity in the collection and compilation of morbidity and mortality statistics, to afford both a current and a permanent record of the epidemic.

2. That the Public Health Service undertake special surveys of morbidity in a sufficient number of localities to give a more exact picture of the prevalence and epidemiology of the disease.

3. That State and local health authorities, the military services, and institutions, in addition to collecting their usual records, undertake such statistical and field studies as circumstances will permit, and that they be especially on the alert to take advantage of any opportunities which may be presented for unusually instructive epidemiological observations.

4. We would also call attention to the need for extensive and careful clinical studies, particularly such as will give accurate descriptions of unselected cases, including the milder types of doubtful diagnosis.

In addition to the general subject, two specific questions have been referred to this committee.

First. Is it desirable that influenza be included in the list of notifiable diseases?

We believe that it should be so included, at least to the extent of simple numerical statements.

Second. Should an official clinical definition of influenza be adopted by this conference for the guidance of physicians in differentiating influenza from other respiratory disorders, to the end that morbidity reports should be more uniformly comparable?

We believe that this is not advisable.

WILLIAM H. WELCH,
Chairman.

REPORT OF COMMITTEE ON PREVENTIVE MEASURES.

When influenza is prevalent or is believed to be approaching a community during the course of an epidemic, it is advisable to take advantage of the public interest and concern by emphasizing anew those public precautions and practices of personal hygiene upon which the prevention of communicable affections of the upper respiratory tract depend.

Measures for precaution fall naturally under those of a communal or administrative character and those which apply to the individual.

- I. Communal or public precautions.
- II. Education in cleanly personal habits.
- III. Advice to individuals for guarding against colds, upper respiratory infections, and influenza.
- IV. What to do to prevent becoming seriously ill if you get the disease.

Though no form of organism than the Pfeiffer bacillus has been discovered, many bacteriologists believe that the disease is caused by a filtrable virus. One point of

general agreement is that the complicating broncho-pneumonia may be produced by a variety of organisms.

The immunity conferred by an attack is relative, some people having several attacks in a lifetime.

The incubation period is very brief—from a few hours to a few days.

The onset is usually very sudden and violent, there is sudden chilliness, fever, headache, pain in the back and legs and intense prostration. Later respiratory, gastro-intestinal, circulatory and nervous symptoms appear. After the initial chilliness or rigor, the fever may rise from 100° F. to 105° F., usually reaching the apex in the first 48 hours, and then gradually subsides. Severe frontal headache and pain in back and legs are frequently complained of.

Among the early symptoms is a catarrhal inflammation of the entire upper air passages, with a serous secretion which later may become mucopurulent.

In some cases there is nausea or vomiting, loss of appetite, these symptoms gradually subside. There are in some cases sharp abdominal pains and often diarrhea. Jaundice is a variable symptom.

The nervous symptoms vary from stupor or delirium to excitement and sleeplessness.

The course of the disease rarely runs over two weeks. Relapses are frequent, recurrences of fever are, however, frequently due to complications.

Complications during the past epidemic were not as numerous or as grave as in former epidemics. The complications, as before, were far more important than the disease itself; the most important of these being the pulmonary complications. I personally did not see a fatality from pneumonia, except in the aged or invalid. Those developing pneumonia usually had not remained in bed as directed and had re-

lapsed. This is in marked contrast to the epidemic of 1918.

Numerous cases developed a troublesome laryngitis, with a very severe rasping cough.

There was in most cases an intense injection and congestion of the nasopharyngeal mucous membrane, causing the severe frontal headaches and predisposing to a sinusitis. In my opinion, one of the most important parts of treatment is to try to guard against such complications by proper attention to the nose and throat. The sinusitis usually appears after the influenza has subsided.

Otitis media was a fairly frequent complication and especially so in children. I saw one case of meningitis in an infant following a middle ear infection in which a pure culture of the influenza bacillus was made from the spinal fluid.

Eye complications outside of the conjunctivitis were extremely rare. Circulatory complications were extremely rare even with the cases developing a pneumonia.

Influenza meningitis is a very rare complication, but occurs more frequently among children.

The urinary complications are the usual scanty urine, slight amount of albumen or a few casts. A severe nephritis is very rare.

Influenza during pregnancy, if very severe, may lead to abortion or miscarriage, and frequently assumes a serious character.

On the whole we might say of this past epidemic that the disease spread with the same rapidity, but was not as severe, nor the complications as numerous as in other pandemics of recent years. However, since so little is known of the etiology of this disease a systematic study must be carried on by all our health departments.

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DISCUSSION.

Chairman Dearman: This paper is open for general discussion, gentlemen. This is more or less of a universal subject. It ramifies into every sphere of medicine. We want a discussion of this phase of the subject, because it seems every year the epidemic or pandemic or sporadic type of influenza breaks out and it seems as though some line of treatment might be suggested by some physician that may be worth while. It is well to keep abreast of a condition that is so invalidating to our civilization. There have been people who have dropped dead after having influenza who had never had any previous murmur of the heart.

Dr. W. H. Priddy (Memphis, Tenn.): This question is, indeed, a very important one to me, and to my mind it is one of the greatest diseases that the doctors today have to combat. We are seeing the effects of this, more especially one who is doing work in mental and nerve diseases. We don't know when we are through with this disease.

Right at the present time I am seeing some patients who had influenza in 1918 and are now developing the ill effects of influenza.

We have never before seen as many people affected mentally as were affected during this last epidemic that occurred in January and February. I believe this is true more so than in 1918. It might be due to the fact that I am in position to see more patients, but I rise to point out to you the seriousness and the importance of this disease rest upon the prevention and not on the treatment.

Dr. J. P. Murray (Carson): I don't presume to offer anything special to this organization, especially since the essayist has said that it is all summarized and we know very little.

I am appearing before you only to ask one question that made an impression upon me this winter and to see whether it has been the experience of others engaged last winter in the general practice. Is there any immunity of certain races? I have been a part-time health officer in my county for the past eight or ten months.

About the fourteenth or the fifteenth of December, this epidemic or pandemic was so widespread and so hurried in its effects that it put our entire school force in our white schools in all our little towns. Our county is very much blessed in nearly every bit of it being in consolidated school districts running from three to ten members in the school. Almost universally the entire personnel of these white schools, including teachers and pupils, were taken ill within a week or two. Not a single negro school in my county (and we have a good many) had to disband. In my practice among the negroes, one family of six or seven had the disease, and one other family consisting of two.

I should like to know whether that happened to anybody else, or whether it might have been a localized immunity in my county, or whether there is something in it as a whole.

Dr. Joe E. Green (Richton): I want to answer the doctor for Perry County. The niggers down there sure had influenza. Some of the doctors spoke of prevention. I am strong for that. I think the niggers' preventative was to tie a big ball of asafetida around their necks at night and in the morning when it got hot it just fogged and they never had influenza.

Dr. J. W. Jackson (Hilton): I beg to take issue with the doctor when he says that the number of cases reported was exaggerated and that a great many of them probably were colds. Around here, a great many of them were not reported because they were mild cases. I have observed that the severe attacks were attended by fewer complications because they had to go to bed and

had to call a doctor. They weren't able to get out of bed. Many of the mild cases kept on their feet and kept going, and then they would come in with complications of pyelitis and sinus infections, and upon inquiry as to the history of influenza the reply was: "I had a cold." Many of them had almost forgotten about it until they were talked to a little more concerning the matter.

The recent epidemic certainly created a serious situation and it should be of considerable concern, because the end results are rather bad. As Dr. Green, I believe, has mentioned, you never know when you are through with it.

Dr. F. Michael Smith (Vicksburg): I am not here to discuss the pathology, etiology or treatment of influenza, or its history or either of its forms, pandemic or otherwise, of the great scourges that have come to our country; but a statement was made relative to the closing of schools.

As a public health officer and practitioner of preventive medicine, I want to give as my experience with the epidemic that we have had so far that the closing of schools has helped very little in the control of influenza. During the past season, although it was in mild form, quite a few of the schools of Mississippi were closed. In Vicksburg there was considerable clamoring to close our schools, but we succeeded in some way in going through, and as far as I could observe, I do not see that the epidemic was continued longer or cut shorter or the fatality of complications was greater.

I am here to state this fact for the general practitioners and the doctors of Mississippi to consider: We so far have no preventatives that we believe are worth while and the closing of the schools has gotten us far.

Dr. G. W. Clayton (Laurel): Gentlemen, I don't think we can ever say what we ought to do as a cut and dried proposition, such as closing or not closing schools. We felt in Laurel that we derived considerable results by closing the schools. I want to make myself clear. Our epidemic began before the Christmas holidays. There was quite a demand to close the schools at that time. Had we closed the schools at that time, it would have meant turning the children out onto the streets during the holiday rush. We felt (I say because I have an advisory committee of seven men, including two physicians, and I got that committee together and took their advice) that after we canvassed the situation we would try to apply common sense. We didn't close the schools because we felt it was best to keep the children in school regularly.

After the Christmas holidays we decided that it was best then to close the schools, because we were not controlling the epidemic.

One of the gentlemen in our town had a big dance on which he had issued about five hundred invitations. When we discussed this matter concerning the schools at the Rotary Club, he was the strongest one for closing the picture shows, churches and schools. When we found he was going to have this dance we told him to call it off. He told me it wasn't any of my business, that it was a private affair.

This is the thing I want to bring before you: If it hadn't been for the backing up by the physicians of my city and if they hadn't been behind me on this thing, I would have lost out as a health officer because of that man's wealth and influence. But when those physicians were called on they gave their opinions to the man, "Certainly, if you are going to close a picture show or a church, close a dance."

So I say to you physicians, because of a solid front that we present on a subject like this can we stand or fall. If I had taken one position and the physicians of my town had taken another, or even several had taken another position, it wouldn't have meant a thing in the world to the public, but inasmuch as the physicians were solid on this matter it went over, and as far as I have heard there have been no marked criticisms.

I hope the physicians will back up the health officer, and I hope the health officer will talk freely to the physicians on these things that we are up in the air on so that we can present a solid phalanx to the people and let them respect the medical opinion as one opinion.

Dr. G. H. Wood (Batesville): I don't care to discuss the paper except that I want to mention one thing. I very seriously oppose giving the influenza vaccine during the epidemic. If you want to get any good from it, I think it should be given some time before and not wait until you feel like you have been exposed to the disease and then give vaccine.

The early part of this year two of my neighboring practitioners, as the saying goes, decided they would "take the bull by the horns" and give vaccine to each other. Before they were ready for the second dose, both of them were down with influenza of a very severe type.

Dr. B. T. Robinson (New Augusta): I should like to hear more general discussion concerning vaccine as a preventative for influenza. If anyone has had experience with reference to vaccine preventing influenza, I should like to hear it.

Dr. A. M. Harelson (Stringer): I have had considerable experience with vaccine. I didn't give it myself, but one of my neighboring physicians gave it to every man, woman and child whom he went to see. He gave it to the whole family, possibly to the horses and the cows. I don't know about that. He told them that if they weren't already infected it would keep them from having influenza, and if they had influenza it would keep them from having pneumonia.

I treated as many patients as he and I never gave a shot of serum. He reported to the county health officer in our county something over sixty cases of pneumonia. I didn't have a case of pneumonia develop.

If his reports were correct, I should say the serum helped to give his patients pneumonia rather than preventing it. I never carried serum with me, and I don't want it.

The only thing I did for my patients who had the flu was to put them to bed as soon as they sent for me and keep them in bed, sweep out their bowels with a mild purgative of some kind, and I poured hot tomato soup into them. I never had a case of pneumonia develop and I never lost a case of influenza during this epidemic. I am not talking about the 1918 epidemic.

Dr. W. W. Davis (Pelahatchie): I want to say that we have just two absolute preventatives. One is isolation. If you don't go near a case that has influenza, you are not going to take influenza. That is certain. Therefore that would come within our quarantine. I had that experience in the epidemic of 1918. If you institute quarantine you must have quarantine.

I happened to be a mayor of a sawmill town and we had pretty good authority and lots of co-operation. We closed down the schools, put the marshall on the street, and kept the children off the street and let the men go on to work. We had very few cases of influenza. Those cases we did have came on a few at a time and we could handle them. When you put a lot of people into a crowded house with influenza, you are going to have an epidemic of influenza.

The next preventative is resistance through personal hygiene, proper feeding, and so on. If you have your resistance up to one hundred per cent, you are not going to take anything.

I think we have two pretty good preventatives by prophylactic means—isolation if you have a case, keep the other people away from it, and then keep the people up to one hundred per cent resistance, because it is just a question of lowered resistance when we take disease.

Dr. T. M. Riddell (Swiftown): At the first of the season last year, that is the flu season, I was asked by a number of my people what they might do as a means of preventing influenza and why I didn't vaccinate them for this trouble. I was troubled so much on the subject that I put out word around my neighborhood that I would vaccinate fifty people who were willing to be vaccinated, free of charge as an experiment, vaccinating them with Lilly's mixed vaccine every five days. They were principally school teachers and high school pupils whom I had the pleasure of vaccinating. Only forty-two completed that course of treatment. I vaccinated them every five days for free inoculation. Out of the forty-two, only about eleven cases, as I remember it, reported to me as having had a marked cold or light attack of influenza. One case had a very severe attack of influenza, with a lobular pneumonia following.

While I am here I want to bring out two points regarding influenza that runs a temperature of 102° or 105° for a few days. It is a difficult matter to find out what is causing it with your stethoscope. In these cases I always suspect a lobular pneumonia or some milder trouble. More frequently you will find a lobular pneumonia; that is, it is there whether or not you find it. You can't always find it.

Regarding what some of the doctors said about the immunity to this disease among the negroes, I have seen in my practice two colored people to one white sick from all troubles. I have never kept correct data on it, but just on the face of it now, it seems to me that the negro is very much more susceptible to the disease than the white race, because usually the negro in my section will go in and bar up his door with anywhere from five to ten in the house and if they find a little auger hole or cat hole in the door they stop that up too. They all sleep in there and if there is one infected with influenza, on the following morning they will probably all have it. I would say they are probably more susceptible to influenza than the white people.

Dr. W. L. Stallworth (closing): I should like to make two points. One is the question of closing schools. It is the concensus of opinion that there is an advantage to closing schools.

Regarding the incidence of influenza among the colored, throughout the state we had about half as many reported among the dark as we had in the white. I think it is a general fact that negroes are more susceptible to pulmonary infections than the white race.

Thank you.

OSTEO-CHONDRO-SARCOMA.*

GEORGE A. BROWN, M. D.,

WATER VALLEY, MISS.

Osteo-chondro-sarcoma is a malignant tumor of the connective tissue variety. It is a combination of sarcoma with bone and cartilage. Usually these accessory forms of connective tissue structure play a subsidiary part in the metastatic activities of the growth. I believe that the subject of bone sarcoma is one that we know very little about and presents one of the most difficult problems the surgeon is confronted with today. Co-operation between the pathologist and surgeon is absolutely essential. In order to determine the type of tumor, it is necessary that sections be made and examined by the pathologist.

The classification of bone tumors adopted by the American Registry of Bone Sarcoma is one of the simplest and best and is as follows:

1. Metastatic tumors, whose primary seat is in tissue other than bone.
2. Periosteal fibrosarcomas.
3. Osteogenic tumors
 - (a) Benign
 - (b) Malignant
4. Benign giant celled tumors
5. Angiomas
 - (a) Benign
 - (b) Malignant
6. Ewing's tumors
7. Myelomas

DIAGNOSIS.

The operation will largely depend upon the laboratory report. A careful history and roentgenograms properly taken at right angles will also aid in clearing up the uncertainty of the outcome of many of these cases. The great uncertainty which exists

in the diagnosis of bone sarcoma on clinical grounds should be taken into account in any consideration of the reports of cases successfully treated which appear from time to time in surgical literature. Codman points out that this percentage of error is, at the present time, in the neighborhood of fifty per cent. Bone sarcoma occurs in the neighborhood of the knee joint in about eighty per cent. Osteomyelitis is frequently diagnosed and treated as sarcoma especially if the infectious organisms are staphylococci of low virulence. In children infection of the bone is more common than malignancy. However, the commonest age for sarcoma is in the second decade. It occurs more frequently in youth than in old age. No case of congenital bone sarcoma has ever been reported. Cases arising after the age of fifty are excessively rare.

There are five points of special interest in the diagnosis of bone sarcoma:

1. Onset of pain. This is an early and constant symptom.
2. General condition of the patient: Sarcoma, as a rule does not develop in an unhealthy person. Probably some other condition if patient is in bad general health.
3. Duration. Pain is at first bearable and patient does not seek advice before a month or two.
4. Age. More frequently seen in youth. Rarely after fifty.
5. Rapidity of growth. After the first month osteogenic sarcomata show a steady enlargement. As a rule, they increase in size slowly but progressively. A small round cell sarcoma is the most malignant type and grows very rapidly.

As a rule, bone sarcomata are usually extensive when first noticed and involve the surrounding tissue. Sarcoma rarely involves the neighboring joint till late in the course of the disease.

*Read before the Section on Surgery, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

TREATMENT.

Early amputation is the method of choice. More cases are saved by amputation than by any other form of treatment. Coley's fluid, roentgen-ray therapy and radium seem to have little or no effect.

CASE REPORTS.

(1) E. T., school boy, aged 16 years. In September 1928 he began to notice pains in his left knee. The pain was more severe when he would run and play. About one month later he noticed swelling on the outer side of the knee. This rapidly and progressively increased in size. The family history was negative. He had the usual diseases of childhood. Left forearm had been fractured twice. There was no history of injury to the knee. Attack of colitis at the age of four. General health always had been good, appetite good, bowels regular. Examination showed a rather symmetrical firm enlargement, apparently springing from the lower end of the femur, and which appeared to be attached to the surrounding tissues. The mass was not bony hard but moved as the femur moved. There were no enlarged lymphatic glands. Roentgen-ray examination showed a tumor mass springing from the lower and outer aspect of the femur, which presented considerable bone destruction. Roentgen-ray examination of the upper two-thirds of the femur appeared normal. There was no metastasis to the lungs. Urinalysis and blood Wasserman negative. Pathological report: Osteo-chondro-sarcoma. Operation Dec. 14, 1928. Under ethylene anesthesia amputation of the upper third of the thigh. Wound healed by primary union. Patient's convalescence was uneventful. Since operation patient's general health has improved and there has been no recurrence.

(2) E. G. aged twenty-nine years, white male, married, came to me Jan. 4, 1925, complaining of a lump in the right buttock. He stated that about three weeks previous he noticed the lump, and that it had progressively increased in size. It had never caused him any pain or discomfort except on one occasion after walking fifteen miles. Examination showed a somewhat rounded tumor mass in the right gluteal region, about midway between the great trochanter and the tuberosity of the ischium and a hand's breadth below the level of the crest of the ilium. The mass appeared to be adherent to the surrounding structures. There were no enlarged lymphatic glands, and there was no loss of weight. Urinalysis and blood Wasserman negative. Reflexes normal. On Jan. 15, 1925 the tumor growth was removed and found to be osteo-chondro-sarcoma. Following removal the patient was given deep roentgen-ray therapy. On Oct. 30, 1925 patient entered hospital with a recurrence in the site of the first operation. Physical examination

was negative except for re-appearance of the growth. Extensive resection was done and the operation followed every three weeks with deep roentgen-ray therapy. Examination Feb. 3, 1926 did not show any further evidence of metastasis. He remained in good health and worked every day until June 10, 1928 at which time he contracted influenza. His convalescence was prolonged and he began spitting up blood. Roentgen-ray examination revealed numerous metastatic nodules throughout both lungs. Patient died Oct., 1928.

(3) Patient, a single woman, aged twenty-one years, was admitted to the hospital, Sept. 29, 1925, with a large chondro-sarcoma of the left index finger. She stated that some eighteen months before admission the growth started as a white mark resembling a blister, and that it grew slowly. At first it was very soft, but it gradually increased in hardness. During the previous two months, it had been growing rapidly. She said she had experienced no pain until a week before she was seen, and that she only came for advice because of the inconvenience caused by the size of the growth. There was no past history of rickets. On examination, a tumor the size of a billiard ball was seen on the palmar surface of the index finger of the left hand. It was situated on the proximal phalanx. It was fluctuating in part, had a broad base, and the skin was nowhere adherent. Roentgen-ray examination showed destruction of the shaft of the proximal phalanx of the index finger and a large soft tumor extending outward, which contained several areas of ossification. Examination of the chest negative. Operation: The index finger and distal half of the second metacarpal bone were amputated. Microscopical examination showed tumor to be chondro-sarcoma undergoing myxomatous degeneration in parts. Examination of the hand, Feb. 28, 1926 showed a painless scar. The movement and gripping power of the fingers were good, and the patient experienced but little inconvenience. There was no clinical or roentgen-ray evidence of metastasis to the lungs or locally in the region of the scar.

SUMMARY.

1. Importance of a careful diagnosis.
2. Osteo-chondro-sarcoma is a malignant growth, and causes death by metastasis.
3. Routine roentgen-ray examination of the lungs in all suspected malignant bone tumors.
4. Amputation, early, offers the best chance for cure. Roentgen-rays, radium and Coley's fluid probably do some good subsequent to operation.

DISCUSSION.

Dr. A. Street (Vicksburg): Gentlemen, I think the doctor should be complimented on his timely and excellent paper. His subject is "Osteo-chondro-sarcoma." That conveys to my mind some type of bone sarcoma. I don't believe it makes much difference whether it is osteo-chondro-myxosarcoma, or which tissue is in predominance. Of course differentiation of malignant tumor comes in the form of the type of tissue. An osteo-sarcoma, with a great deal of osteoid or osseous tissue is more easily differentiated than one without osteoid or osseous or sarcomatous or fibrous tissue. In the long run, they are all bone sarcomata and are all very extremely bad from the standpoint of prognosis.

In the diagnosis, of course the tissue section, after thorough history and physical examination, is very important.

There is one point in the diagnosis which may be of great importance. The doctor said that osteomyelitis might be mistaken for bone sarcoma. On the other hand, bone sarcoma has been more than once mistaken for osteomyelitis, especially the Ewing's type of tumor, not only by the clinician but also by experienced pathologists. Experienced pathologists have passed on bone sarcoma as osteomyelitis. The Ewing's tumor and especially the rapidly growing types of osteogenic sarcoma are very liable to respond, in some degree, to roentgen-ray therapy. The Ewing's tumor responds to a very extensive degree to radio-therapy. That can be and is used as the diagnostic method. If you subject an osteomyelitic process to radio-therapy it does not improve. If you subject a suspicious bone lesion, which may or may not be osteogenic or Ewing's type of growth or some other type of bone sarcoma, to radio-therapy and get a very prompt and satisfactory recession, you have gone a great way in the diagnosis. Of course it is taken for granted in your radical treatment of these bone sarcomas, if you are contemplating an amputation, that you have subjected the other portions of the body (the lungs and other bones) to thorough radiographic examination to be sure that you have not already a metastasis somewhere else. There is no value in operating one lesion if you have metastasis elsewhere.

Dr. George A. Brown (closing): I have nothing further to add. I appreciate Dr. Street's discussion. The main point that I wished to bring out was that these tumors are highly malignant. Unless we get them early, amputation is the only thing that is going to give any results. Occasionally we will be able to save a life by amputation, but, in my opinion, to try roentgen-ray or radium is a waste of time.

We know that in sarcoma metastasis takes place through the blood stream, while in carcinoma it takes place through the lymphatic system. For that reason, I think early operation will give better results than any other form of treatment.

PROSTATIC OBSTRUCTION.*

W. H. SUTHERLAND, M. D.,

BOONEVILLE, MISS.

In the sixteenth century, Massa discovered the prostate gland, this being the first mention of it as an organ of which we have any knowledge. In the seventeenth century, Riolan discovered that it would obstruct the outflow to the bladder. It was not until 1866 that Kuchler did the first radical removal of this gland on the cadaver. Billroth, in 1867, did a radical operation on the living. Goodfellow, in 1890, began the removal of this gland by the perineal route. Fuller, in 1895, began the removal by the supra-pubic method.

It is not within the scope of this paper to discuss the prostate gland in all its phases, but to pay special attention to the pre-and post-operative care. No subject can be discussed from any angle intelligently unless a little background or foundation be laid by giving at least a short history of it. Very little was known about the treatment of prostatic obstruction till the last three decades, and by far the larger part of this knowledge has been gained during the last decade. About all that we knew to do twenty years ago was to relieve the complete retention by supra-pubic cystotomy, when the patient could not be relieved by catheter, and follow this by removing the gland by the method best suited to the case. Nothing was known about blood chemistry and how important it is to know the percentage of blood urea, etc. Very little was known about the importance of pre-operative drainage and the question of fluids, as well as the findings of cystoscopy.

*Read before the Section on Surgery, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 16, 1929.

The cause of enlargement of the prostate gland has not yet been definitely settled; some of the authorities still hanging to the question of Neisserian infection as being the most probable cause. The consensus of opinion now, I believe, however, disagrees with this as the most probable etiology and lays it to a natural process of senility.

The all important thing to ascertain when one is suffering with the symptoms of prostatitis, with which you are acquainted, is the diagnosis; and not only to say whether or not the gland is hypertrophied but the probability of a malignancy being present.

This can not by any means always be done, but one who has had years of experience with hundreds of these cases may, in a large majority of instances, say if the case in question is or is not malignant.

In the preparation of a patient for operation there are many things to consider; first, if it is not an emergency case a general examination is done giving special attention to the heart, arteries, and urine. A routine roentgen-ray of the urinary tract is made in order to ascertain the presence or absence of renal, ureteral or vesical calculi.

A functional test is made of the kidney out-put of solids, the bladder is emptied voluntarily and then catheterized for any residual urine. Immediately following this, or even prior to this, the test for blood urea is made. Urea was discovered in the urine in 1723 by Rouelle when he, at the same time, established the significance of urea in nitrogenous metabolism. Prevost and Dumas demonstrated the relation of the kidney to the excretion of urea in 1823. Urea was first formed synthetically from inorganic constituents by Wohler in 1828 and this was the inception of organic chemistry and the beginning of biologic chemistry. The increase of urea in the blood indicates a retention due to decreased activity on the part of the kidney.

It has not been my practice to use the cystoscope routinely, reserving it for use

only for such purposes as if for any reason I should suspect a tumor or cancer of the bladder, vesical diverticuli or in some cases for pyelitis.

It is reported by Judd that about five per cent of operative prostate cases have diverticuli of the bladder. For that reason it is good practice to make a cystogram in all cases when practicable.

All these examinations of which I have spoken can not be made on emergency cases, but the question of drainage immediately presents itself. This can either be done per urethra or supra-pubic, and often we have no choice, as a large portion of our old men enter the hospital completely obstructed and a catheter can not be passed.

I have heard this subject of drainage discussed many times, but my plan has been to do a supra-pubic drainage, unless there are special contra indications for it. If the bladder is completely blocked and a catheter can not be passed I open down to the bladder under a local anaesthetic, push a large trocar and canula into it and on removing the trocar quickly push in a rubber catheter slipping the canula over it letting the bladder wall close around the tube and only allowing a portion of the urine to escape by clamping the catheter with a hemostat, then closing the wound, usually with silk worm gut. Should there not be complete retention, or if so, after a catheter can be used, I then fill the bladder with a weak solution of potassium permanganate and open the bladder in like manner, or by opening it with a knife after placing a purse string suture in the bladder wall and then using a mushroom catheter. The time of drainage depends on the percentage of blood urea, the functional kidney test, the residual urine, and the general condition of the patient. The larger the amount of residual urine and the freer of infection, the longer the drainage as a rule.

With a patient of average age, say sixty or seventy years, with a blood urea of 14 to 20 mgms. to the 100 c. c., and no other

complication, I allow to drain two weeks. I find those cases get along better who have infection of the bladder which has subsided. This cofferdams the bladder wall against the infection that follows the removal of the gland. During the time of drainage they should be given an abundance of fluids with some alkali, such as sodium citrate in 20 to 30 grain doses four times daily, and just as soon as possible get them up in a chair and on their feet.

I have often allowed them to return to their homes where they feel much better satisfied and can have a wholesome diet and their ordinary surroundings. They do better. In certain cases I have allowed them to drain for three or four months. I like to be quite certain that the blood urea is at least below 20 mgms. to the 100 c. c., that the urine is, or has been, full of pus, and has had time to form a protective wall against outside infection; that the appetite has returned to normal, and that the general condition is as near normal as can be expected.

There is a class of patients with obstruction to which I wish to call your attention: An old man with a very slowly growing prostate obstruction which is so insidious that there is more of a discomfort than a pain, and which proceeds so surely that sooner or later the bladder wall becomes very thin and loses its tone, and becomes so greatly distended that the pressure backs up from the bladder causing the kidneys great embarrassment. This is the kind of patient that has hiccough, vomiting, delirium, is restless by spells, dehydrated, constipated, and becomes listless. This also is the kind that should have the most careful caution about emptying the bladder too suddenly or too completely. In these long standing distentions the bladder wall can not follow up the space evacuated by the sudden emptying and consequently the blood rushes to fill the blood vessels which have been so pressed and a hemorrhage is very likely to occur, also causing the kidneys to suddenly shut off.

This patient must be drained very gradually allowing only a portion of the urine to escape at once, allowing the bladder wall to very gradually retract following the loss of urine, and at the same time gaining its tone. We usually find one of this type to have a high blood urea. He should be intermittently drained as stated above, or allowed to drain by the method used by Bumpus. After putting in a urethral catheter and attaching a long tube to it, letting this tube pass upward into a can just high enough to allow the urine to drop into it and lowering the can each day by a few inches, and then keeping the patient full of saline by intravenous method or by hypodermoclysis. The Murphy drip can not be depended on sufficiently to be used alone.

After the patient is prepared, which requires from two weeks to three or four months, I remove the gland by way of the supra-pubic method by opening through the same incision staying near the pubic arch in order to prevent rupturing into the peritoneal cavity for by this time the tissue has become very friable. With my left index finger in the rectum and my right one in the bladder, I plunge into the post urethra and break into the line of cleavage of the gland and follow this as closely as possible, shelling it out. Some are much easier than others. We often encounter those glands that are fibrous and are very hard to separate; others shell out easily. This being completed I mop the cavity with hot sponges and inspect for large bleeding vessels. I realize that later often severe hemorrhages occur and require stopping by some pressure apparatus such as the Pilcher bag, but I have been fortunate so far in not having had a severe hemorrhage. After thoroughly satisfying myself that no large vessels are open I put a large tube into the bladder cavity being careful not to have it long enough to impinge on the bladder base, as to do so would cause intense straining and tenesmus. I close the bladder wall, fascia and skin separately when possible and I am always very careful not to close

the tissues too closely around the big tube, and, also that this tube is not against the pubic bone. Such, in either case, would easily cause pressure necrosis causing extensive suffering and slowly healing.

I do not leave this large tube in more than forty-eight hours, and often remove it in twenty-four hours. Just as soon as the urine clears and all clots are out, this tube has served its purpose and should be taken out. The walls of the wound fall together and begin to close. I let the urine be absorbed by large dressings, changing as often as needed. Also I begin at once to spread zinc oxide ointment around the wound on the skin to save the skin from excoriation by being urine-soaked. I pass a sound into the bladder per urethra every few days as soon as the soreness begins to leave.

At the time of the operation, should the peritoneum be ruptured as spoken of above, my usual method is to place a large gauze pack against this place holding in the contents as well as possible and proceed with the operation. After finishing, I sew up the rent and place into the peritoneal cavity a small drainage tube leaving it in about two or three days. I have never had any serious trouble by this accident. I never irrigate the bladder or bother with it in any way after the operation, unless infection and sloughing take place, preferring to let nature care for the wound and the clots which form in the cavity left. I have never so far had a serious hemorrhage.

There are a few important symptoms that we must look out for post-operatively; one is to see that there is plenty of drainage, another is to keep the abdomen clear of gas both in the intestines and stomach and combat shock and stupidity with heat, saline, glucose, and blood transfusion if needed. Remove gas by enema and gastric lavage. I think it much better and easier to prevent shock and stupidity than to have to relieve them after allowing them. To prevent both these, I give the pre-operative

care explained, and use a local anaesthetic and ethylene during the operation. The patients are all old men and bad risks at the best so we should be very careful to keep them perfectly warm before, during, and following the work. Often a death is caused by taking a slight cold just following the operation, especially if the patient is allowed to get too warm and while in a profused perspiration he should become suddenly chilled by carelessly allowing a draft of air on him.

A good procedure is to give pantopon, grain 1/6 and hyoscine, grain 1/200 one hour, and fifteen minutes respectively preceding the operation.

There are several complications post-operatively even after the patient has been dismissed and gone to his home, one of which is the gradual closure of the urinary outlet from scar tissue formation following the removal of the gland and which requires dilatation by properly sounding if seen in time, but these cases sometimes return several months or years after dismissal with a complete closure of the outlet, all the urine draining through the supra-pubic fistula. This has happened in two of my cases and I had to open the urethra per perineum dilating it and allowing the bladder to drain through a tube inserted for several days until the ventral fistula closes. The last made opening usually closes spontaneously in a short time.

DISCUSSION.

Dr. T. W. Holmes (Winona): I want to thank Dr. Sutherland for his paper. He covered practically everything that could be covered. The only thing I want to mention is a case where there is an enlarged prostate with an interstitial nephritis. In those cases we depend on kidney function tests to tell us whether to remove the prostate.

A kidney function test is very, very deceptive, however.

I enjoyed the paper very much. I do not want to take up your time because there is nothing that I could add.

Dr. John C. Cully (Oxford): I don't want to prolong the discussion, but I do want to con-

gratulate Dr. Sutherland on his excellent paper. There are so many points regarding this condition which would take a long time to cover. There are a few which I should like to enumerate.

The subject of Dr. Sutherland's paper was "Protastic Obstruction." He confined his remarks solely to prostatic hypertrophy of old age, so I shall not go into the other causes of protastic obstruction.

The first thing I should like to call attention to is the advantage of taking a roentgen-ray picture of these bladders, not so much for the diverticula that might be present, but the calculi. After you go into the bladder it is possible sometimes to overlook a small stone which will give trouble even after the operation.

Again there is always a possibility of this obstruction being due to a dunce-cap, middle lobe, and a prostatic removal is absolutely unnecessary and a lot of old people might die following an operation. In that condition I think the punch operation is by far superior to prostatic removal.

It is to be regretted that every community hasn't an urologist or someone to do this particular field of work. It falls into the hands of those who are doing general surgery to relieve a lot of cases whom we cannot refer to a specialist. I am a crank on specialists. I believe we all ought to learn one thing and learn it well, rather than try to do too much. This one particular field, I believe, comes under the heading of urology and should be sent to the urologist. But, as I say, a lot of people, because of their social status and because of acute conditions, come to us for relief. Those are the patients, I believe, who are appreciative of having something done for them.

I think cystoscopic examination is very important where cystoscopy is possible. I don't believe any trauma should be produced by the cystoscope. Where possible, I think cystoscopy should be performed, the bladder wall examined thoroughly for new growths, or the interior of the bladder examined for calculi.

The next thing that I think is by far the most important of all as far as operation is concerned is anesthesia. In a series of cases which I had, I had two deaths following anesthesia. I rather wanted to back off from doing prostates after that.

Since I commenced to use spinal anesthesia (and when I say spinal anesthesia I mean controllable spinal anesthesia) in a series of twenty cases of prostatectomies, in which the known

prognostic intention of those cases was about forty-five, I have had absolutely no post-operative complications. I have had a perfect recovery of every patient, and during each operation the patient was able to laugh and talk with me and I had no trouble.

Along this line I should like to digress for just a moment and go back to drainage. Dr. Sutherland spoke of drainage. Where possible, I think drainage should be carried on through the urethra. If it is impossible to get into the bladder, as he stated, which is so in a large percentage of cases, I think a suprapubic drainage should be done, of course. If you can get into the urethra and connect that catheter to a little connecting tube and carry that to a bucket or container which can be elevated so that the bladder cannot empty all at once, you are then, by gradual drainage, relieving the kidney of the pressure which has been put upon it; and by daily irrigation of that bladder with one-half of one per cent of silver nitrate solution you will rid the bladder wall of a great deal of infection before the operation.

There is one point with reference to the control of hemorrhage and to visualizing the field of operation. When you use spinal anesthesia (and I think spinal anesthesia is preferable to sacral block because sacral block must be used in the hands of an expert) there is absolutely no chance of not getting anesthetization. By putting the patient in the Trendelenburg position, you get anesthesia in the spinal canal, but you get a perfect blocking of the field of operation below the point of injection. When you do that, the intestinal tract simply drops out of your way, the peritoneal folds hang back as far as possible, and there is no danger of going into the peritoneal cavity if you are careful. Retract with the Murphy retractor and then go in and see what you are doing. You can use an abdominal light, such as the Cameron light, the new light which Cameron has put out with the abdominal retractor on the end, and you will have a perfect visualization of the field.

Then by blunt dissection through the top of the prostate you can start in the bladder wall and dissect with your finger or a blunt instrument and remove as you would a tonsil. You have your field before you, and when you get through you simply have a little opening in the mucous membrane of the bladder and you have the opening where the prostate came from.

Dr. W. W. Eley (Biloxi): I am not a urologist and I don't propose to discuss the doctor's paper. I do want to state that I am a victim of a diverticulum which was removed in 1927. I went

through tortures of all kinds before I really found what was the trouble. I had my teeth, there was some pus in the urine, which as you all know is a common occurrence in lots of cases with no prostatic trouble or diverticulum. In my particular case the pus was heavy. The first thing I did was to have my teeth extracted. I went further and had my tonsils removed. Later I went to a urologist, in fact two or three urologists. I went to the best in the country, I thought, and he fell down completely. Of course, he didn't go far enough to help my case. He didn't take a roentgen-ray picture of the bladder, and he didn't do a cystogram, which was the reason for his not locating my trouble.

I finally got on the right track and had the diverticulum removed. Since then I have been feeling a whole lot better, but still I have to have another operation, possibly this summer. I intended to have the prostate removed in 1927, right after the other operation, but I had a complete suppression of the urine and didn't think it wise to do it at that time.

Dr. W. H. Sutherland (closing): I want to thank you gentlemen for the liberal discussion of my paper. I have no desire to extend the time for any further discussion.

COMPOSITE STATISTICAL STUDY OF CHARITY HOSPITAL SURGICAL DEATHS.*

FRANK L. LORIA, M. D.,

NEW ORLEANS.

At the suggestion of your Chairman, Dr. Peter Graffagnino, your Secretary has undertaken a composite statistical study of all the cases, considered in groups, coming under the supervision of this section. The monthly meetings during 1928 and 1929—running from September to March, inclusive—consisted, in addition to the usual business, of a survey of several interesting cases selected from the death group of the preceding month, and an analytical survey of the cases admitted to each sub-section

with the deaths in said sub-sections, and their mortality rate. As this is the last meeting at which your present Chairman, Dr. Graffagnino, will preside, he has suggested and asked me to undertake to compose statistical tables which would show the work of the individual meetings as composite figures running from the cases of the month of September, 1928, to the cases of the month of March, 1929, inclusive.

These tables were compiled from the data at hand; that is, the data given out each month and of which each member received one copy. The Surgical Staff is composed of the general surgery, orthopedic, fracture, surgical diseases of children, gynecology, obstetrics, genito-urinary, eye, ear, nose and throat, and skin services. In this survey the general surgery, orthopedic, fracture, and surgical diseases of children sections are grouped in one, while the others are grouped separately.

A review of this data gives us very interesting information. To begin with, the total number of admissions to each group is given as well as the number of deaths and the mortality rate. An outline giving the diagnosis in the fatal cases follows each group, and just a glimpse through this again furnishes one more data for speculation. Secondly, the mortality rate in each group with the differences in the different groups again gives us interesting information; and finally, although this survey covers only a period of seven months, it is of sufficient length to give one a satisfactory knowledge of the work being done by the surgical section of the Hospital Staff.

The figures reveal an interesting comparison of the various groups. The highest mortality rate is found in the surgery group (which includes general surgery, surgical diseases of children, orthopedics and fractures), a rate of 6.26 per cent. The genito-urinary group is next with a figure of 4.5 per cent, while the eye, ear, nose and throat group shows a mortality of only .68 per cent. When one takes into consideration the fact that the first group includes all

*The following report was presented at the meeting of the Charity Hospital Surgical Staff, October 16, 1929. It was deemed of sufficient interest and importance to publish as a contribution to medicine in the scientific section of the Journal, rather than appearing in the Transactions of the Surgical Staff of the Charity Hospital.

accidents and homicides with their complicating injuries, as also the hopelessness of the many genito-urinary cases on first admission to the Hospital, it is little wonder that the figures are not even higher. For example, of the 317 deaths attributed to surgery, 156 were accident or homicidal cases, 6 were cases of cerebrospinal syphilis, 6 of congenital syphilis, and 1 of syphilitic endocarditis. The syphilitic cases, although their deaths occurred in medical services, the credit for same is turned over to the department of surgery. Again of the 57 deaths credited to the genito-urinary group, 15 were cases of prostatic hypertrophy, and since this is admitted to be a disease of the old, we can again readily understand the figure on the mortality rate opposite this group.

The mortality rate of the surgical section of the Hospital Staff, according to this data, is 3.73 per cent. This, of course, includes all the groups named above. A rate of 3.73 per cent we must admit is one which certainly can be pleasingly placed alongside the mortality rate of the other great hospitals of the country. When we consider that about 95 per cent of all serious accidents are hurried to Charity Hospital for care, we certainly must acknowledge the good work of the resident and visiting staffs. Certainly, it is through the interest and untiring efforts of the surgical staff that the hospital is able to hold its head up in pride.

A consideration of the various groups, with the figures are herewith presented:

COMPOSITE STATISTICAL STUDY OF CHARITY HOSPITAL SURGICAL DEATHS OCCURRING DURING MONTHS OF SEPTEMBER, 1928, TO MARCH, 1929, INCLUSIVE. DATA COMPILED FOR RECORDS OF THE SURGICAL STAFF TRANSACTIONS.

SURGERY.

(Including Orthopedics, Fractures, and Surgical Diseases of Children)

Total Number of Admissions	5059 cases
Total Number of Deaths	317
Mortality Rate	6.26

Death cases classified as follows: cases

1. Appendicitis	15
2. Accidents and homicides (with complications):	
a. Burns	33
b. Fractures	31
c. Gunshot Wounds of:	
1. Head	6
2. Neck	3
3. Chest	4
4. Abdomen	9
5. Back	1
6. Extremities	2
7. Entire body (bird shot).....	1
d. Head Injuries	48
e. Incised and stab wounds.....	9
f. Crush injuries and injuries to entire body	12
3. Carcinoma of:	
a. Esophagus	1
b. Lip	1
c. Neck	3
d. Transverse colon	2
e. Stomach	8
f. Face	1
g. Jaw	2
h. Intestine	2
i. General	1
j. Breast	1
k. Rectum	3
l. Gall-bladder	1
m. Liver	1
n. Soft palate and tongue.....	1
4. Cholecystitis	4
5. Fistula, fecal	1
6. Gas bacillus infection.....	2
7. Goiter (Toxic adenoma and exophthalmic)	3
8. Meningo-myelocele	1
9. Obstructions (Intestinal):	
a. Strangulated (Inguinal) hernia....	7
b. Intestinal obst., cause not given....	1
c. Intussusception	2
d. Strangulated umbilical hernia.....	1
e. Caused by adhesions.....	2
f. Volvulus	2
g. Incarcerated epigastric hernia.....	1
h. Sarcoma of large bowel (Hepatic Flexure)	1
i. Strangulated femoral hernia.....	1
j. Imperforate anus (Congenital atresia)	2
k. Strangulated incisional (umbilical hernia)	1

10. Osteomyelitis (acute)	5
11. Osteomyelitis (chronic)	1
12. Abscess of:	
a. Liver	3
b. Subdiaphragmatic	2
c. Alveolar	1
d. Thigh and leg (Septic arthritis)....	1
13. Tetanus	7
14. Hemorrhoids	1
15. Inguinal hernia (right).....	2
16. Gangrene:	
a. Diabetic	5
b. Senile	2
c. Berger's Disease	1
d. Raynaud's Disease (feet)	1
e. Infective	1
17. Sarcoma of:	
a. Jaws	1
b. Mesentery involving small intestine	1
18. Gastric ulcer	5
19. Dilatation of duodenum.....	2
20. Ruptured spleen	1
21. Cellulitis of face.....	3
22. Tuberculosis spondylitis.....	3
23. Cerebrospinal syphilis	6
24. Congenital syphilis	6
25. Syphilitic endocarditis	1
26. Congenital malformation of brain.....	2
27. Papilloma of rectum.....	1
28. Empyema	5
29. Carbuncle of neck.....	2
30. Ruptured varicose veins.....	1
31. Retroduodenal hernia	1
32. Congenital malformation of spine.....	1

GYNECOLOGY.

Total number of admissions	2025 cases
Total number of deaths	31
Mortality rate	1.53
Death cases classified as follows:	
1. Abortions (incomplete)	2
2. Abscesses (pelvic)	3
3. Carcinoma of—	
a. Cervix	5
b. Vulval	1
4. Uterine fibroids	9
5. Salpingo-ophoritis—	
a. Acute	2
b. Chronic	4
6. Endometritis	1
7. Pseudomucinous cyst of ovary (right) ..	1
8. Papilocystadenoma of ovary.....	1
9. Vomiting in pregnancy.....	1
10. Ruptured ovarian cyst.....	1

OBSTETRICS.

Total number of admissions.....	2381
Total number of deaths.....	65
Mortality rate	2.7
Still-births	56
Death cases classified as follows:	
1. Prematurity (intracranial hemorrhage)	44
2. Parturition—	
a. Cause not given.....	1
b. Hemorrhage	3
c. Eclampsia	2
d. Acute nephritis and pneumonia.....	3
e. Puerperal septicemia	6
f. Retained placenta	1
g. Placenta praevia	1
3. Miscarriages	1
4. Toxemia of pregnancy.....	1
5. Premature labor	1
6. Incomplete abortion	1

GENITO-URINARY.

Total number of cases.....	1266
Total number of deaths.....	57
Mortality rate	4.5%
Death cases classified as follows:	
1. Carcinoma of penis.....	1
2. Granuloma inguinale and syphilis.....	1
3. Incontinence (urine and feces), Lues....	1
4. Hypertrophy of prostate.....	15
5. Pyelonephritis	4
6. Strictures (urethral)	11
7. Tumor of adrenal.....	1
8. Pyelonephrosis	2
9. Pyonephrosis	3
10. Carcinoma of—	
a. Prostate	3
b. Bladder	5
11. Syphilis and gonorrheal urethritis.....	1
12. Perinephritic abscess	2
13. Acute retention (Prob. carc. of bladder)	1
14. Hydrocele	1
15. Perineal abscess	1
16. Hypernephroma (bilateral)	1
17. Abscess of prostate.....	1
18. Hypernephroma (single).....	1
19. Chronic interstitial nephritis.....	1

EYE, EAR, NOSE AND THROAT.

Total number of admissions.....	2190
Total number of deaths.....	15
Mortality rate	0.68%
Death cases classified as follows:	
1. Chronic mastoiditis and brain abscess....	1
2. Otitis media	4
3. Acute mastoiditis	1
4. Mastoiditis	1

5. Carcinoma of esophagus.....	1		SKIN.	
6. Foreign body in larynx.....	1	Total number of admissions.....	185	
7. Fractured larynx	1	Total number of deaths.....	5	
8. Cavernous sinus thrombosis.....	1	Mortality rate	2.7%	
9. Foreign body in bronchus.....	1	Deaths classified as follows:		
10. Acute conjunctivitis	1	1. Impetigo contagiosa	1	
11. Sarcoma of eye.....	1	2. Arsenical dermatitis	1	
12. Foreign body in trachea.....	1	3. Erysipelas of right leg.....	1	
		4. Diagnosis not given.....	2	

CASE REPORTS AND CLINICAL SUGGESTIONS

PURPURA HEMORRHAGICA VERA*.

R. H. POTTS, M. D., and
REBECCA M. STRAHAN, M. D.,

NEW ORLEANS

Purpura hemorrhagica has been defined by Minot as a condition characterized by hemorrhage from mucous membranes, petechiae or echymoses of the skin, a markedly reduced platelet count, a much prolonged bleeding time, and a non-retractile blood clot.

Werlhof in 1731 first differentiated the condition from other varieties of hemorrhagic diseases. Denys in 1887 noted the platelet reduction. Kaznelson first showed the striking results that follow splenectomy.

We wish to present the following case which was admitted to the Baptist Hospital, New Orleans, La., on February 21, 1929, with the classical signs of purpura hemorrhagica vera, namely:

1. Decreased platelets.
2. Failure of blood clot to retract normally.
3. Increased bleeding time.
4. Slight disturbances of coagulation time.
5. Positive tourniquet test.

Since these cases usually present themselves in a form easily diagnosed, it is not

from the standpoint of diagnosis that we present this case, but from our interest in the disturbed mechanism of the factors concerned in blood clotting.

The classification of hemorrhages and the mechanism of blood clotting is still in the experimental stage, so in presenting this case, we merely suggest a few points which we have deducted from the present literature on hemorrhage and blood clotting.

CASE REPORT.

The patient, a white female child, aged 6 years, was seen because of bleeding from the teeth and gums. On February 18, about 7 P. M., the mother pulled a tooth, which had been loose for several days. The bleeding did not stop, so about 11:30 P. M. the patient was carried to a nearby drugstore, and was given some Monsell's solution as a mouth wash. The bleeding continued and the following morning, February 19, she was carried to Dr. B. H. Gunter, dentist. Dr. Potts was called during that afternoon, and gave her a subcutaneous injection of fibrogen (Merrill). No hemastasis resulted. The bleeding readily stopped after an oral administration of the same substance. At the point of the subcutaneous injection, a hematoma, about the size of an orange, was formed. The bleeding resumed after 2½ hours and continued with the exception of periods of two or three hours following repeated doses by mouth of fibrogen until the time of admission to the hospital, February 21. On entrance to the hospital, blood was flowing from the socket of a recently pulled tooth, around several carious teeth, from a sinus of an upper molar, and from several points on the mucous membrane of the oral cavity. Adrenalin was applied and cotton pledgets were placed firmly against all bleeding points. These had to be continuously changed during the entire day. At 8 P. M., February 21, the patient was given 110 c.c. of whole blood by transfusion. The bleeding

*Read at the Regular Staff Meeting, Southern Baptist Hospital, June 8, 1929.

readily stopped, but resumed itself after eight hours. The following morning, February 22, she was given 8 c.c. of whole blood intramuscularly, and the bleeding stopped for about twenty hours. February 23, she was given 8 c.c. whole blood intramuscularly, which controlled the bleeding for a day and night. On February 24, she was given 4 c.c. whole blood intramuscularly, which controlled the bleeding about twenty hours. February 25 she was given 8 c.c. whole blood intramuscularly, and bleeding ceased from thirty-six to forty hours. February 27 and 28, she was given 8 c.c. whole blood each time. She was discharged February 28, with no bleeding for the past thirty-six hours and no more bleeding.

The general condition of the patient was good. She was regularly constipated. She has had no blood in the stools. There has been no new hematomata. For the past few months, the mother has noticed unaccountable blue spots over the body.

Past Medical History: She was a full term, low forceps delivery, and grew up apparently normally. Had mumps in 1928, and has had no other illness. She has never previously manifested any evidence of prolonged bleeding when injured.

Family History: Father is living and well. Mother is well and living. Mother has had no miscarriages. There is no history of hemophilia or chronic diseases.

Physical Examination: White female, aged 6 years, well developed, and well nourished, not acutely ill, but appeared rather anemic. The skin was warm, moist and pliable. There was no rash, but many petechiae were present over the body, and especially about any joint where the slightest pressure had been applied. Large purpuric spots appeared at various places on the body. The ears revealed no evident pathology, and the eyes and nose were negative. The teeth were deciduous, and many were carious and broken off. There was a sinus from one right upper molar,

from which blood continuously oozed. Blood was oozing from the socket of a recently extracted tooth, and from around the carious broken ones. The throat was generally congested. Thorax: There was no evident pathology revealed in the heart or lungs. Abdomen: Liver and spleen were not palpable. Extremities: On the right thigh, anterior surface, was a large hematoma the result of a recent injection of fibrogen (Merrill). Reflexes: No pathological reflexes.

Stool: 2-22-29 and 2-25-29, negative for occult blood, ova, or parasites.

Urine: 2-22-29, straw, acid, 1010, negative for albumin, sugar, indican, acetone and diacetic acid, microscopic negative.

The treatment of hemorrhage has long been one of interest to the profession and the laity. It is one of the few real emergencies that arise in medicine, and one, which until recent years, has been handled in an unscientific manner.

Briefly, we may lay down the routine used by older clinicians as being:

Rest in bed.

Morphin.

Reassurance.

Ice-cap over the supposed bleeding area, (if concealed) and packing or ligatures, if visible.

As to drugs, ergot, calcium, emetin, and many others were formerly given.

More recently, horse serum was added, and at comparatively recent date, specific

LABORATORY WORK:

	2-21-29	2-24-29	2-26-29	4-1-29	5-12-29
R. B. C.....	2,205,000		3,725,000	4,750,000	4,225,000
Hgb.	50 %	50 %	60 %	70 %	70 %
C. I.	1.1				
W. B. C.....	8,500		8,750	7,500	8,250
S. M.	33		23		59
L. M.	9		4		4
N.	58		68		34
E.			5		2
B.					1
Coag. time	1½ min.	1½ min.	1 min.	1 min.	1½ min.
Bleeding time	3½ hrs. plus	1 hr. plus	30 min. plus	3 min.	7 min. plus
Platelets	1000		10,000		67,500

substances which contain in some form one or more of the bodies which circulate in the blood and enter into the actual clotting.

The very latest development in the control of hemorrhage seems to be transfusion, coupled with the above measures. In all these years there has been a rather hazy idea of the actual mechanism by which blood clots; therefore, the control of hemorrhage is still far behind advances made along other lines.

Mills, of Cincinnati, seems to have struck the real keynote, and if his work holds up, there must be a rewriting of blood clotting chapters in our physiologies. His classification of hemorrhages seems to us a very important step forward. It is based upon alterations in the clotting mechanism, due to various causes, which one might well call the etiology of hemorrhage. He classifies as follows:

Group I. Hemorrhages from physical causes.

- (a) Accidental trauma.
- (b) Congestion and venous rupture.
- (c) Arteriosclerosis and hypertension, as in apoplexy.
- (d) Surgical bleeding. (We would prefer to say most surgical bleeding).

Group II. Hemorrhages as a feature of other diseases.

- (a) Infectious conditions of a chronic or semichronic nature.
- (b) Malignant fevers.
- (c) Anemias. Pernicious anemia, and rapidly progressive secondary anemias (Our note—even

those following causes in Group I.)

- (d) Leukemias.
- (e) Jaundice, due to accumulation of bile salts in the blood.
- (f) Metabolic disturbances. Scurvy and severe malnutrition.
- (g) Tumors—particularly carcinoma.

Group III. Hemorrhage in truly hemorrhagic diseases.

- (a) Hemophilia.
- (b) Purpura of the true thrombopenic type.
- (e) Melena neonatorum.

He further suggests that he might add a fourth group to include the physiologic bleeding of menstruation; and we make bold to remind him that this fourth class might well also include hemorrhage due to the apparently normal lengthening of the bleeding time of the newly born, between the third and eighth days, as is commonly seen after too early circumcision.

Purpura hemorrhagica vera is classed in Group III, as a truly hemorrhagic disease, and should in no way be confused with one of the hemorrhages belonging to Group II, and having as a symptom, purpuric eruptions. Being also, very likely an allergy, the therapy is further complicated by the discomfort of using the substances derived from foreign serums, so commonly relied upon in the control of hemorrhages of other types, and which are so useless here.

In order to arrive at a rational therapy for the disease, it would be well could the disturbance in the clotting mechanism be fully understood. But we are at sea in this condition.

According to Howell the plasma contains prothrombin, anti-prothrombin, calcium, and fibrinogen. There may be formed at times, traces of thrombin, (regarded as not present in the blood normally) and there will be slight amounts of thromboplastin or thrombokinase (cephalin), but these are prevented from acting, or are removed by the antistances. The first step in clotting is the liberation of cephalin from platelets when these disintegrate (or from leukocytes or tissues.)

(1) Cephalin and antiprothrombin equal an inactive compound. Since the antiprothrombin acted to prevent the union of prothrombin and calcium, the next step is not permitted to occur.

(2) Prothrombin and calcium equal thrombin.

(3) Thrombin and fibrinogen equal fibrin.

In brief, that is about all of Howell's theory. Cephalin comes from platelets, leukocytes, tissue cells. Prothrombin also seems to come from the platelets, as well as being present in the blood plasma, as is obtained (experimentally) by perfusion of red bone marrow where the megakaryocytes which form the platelets are located. Heparin, or the normal antiprothrombin, comes from the liver. Leech extract (hirudin) is an example of an antithrombin which prevents the reaction between thrombin and fibrinogen. Calcium, of course, is in the blood. Oxalate precipitates it; citrate changes it to a non-ionized form. The calcium ions are needed to react with the prothrombin. The source of fibrinogen is from liver, in part at least.

Mills believes there are two modes of blood clotting, one of which, as we under-

stand it, seems to catalyze the other. The tissues, according to him contain a protein-cephalin compound (apparently not simply cephalin) and he calls this compound "tissue fibrinogen" following the terminology introduced by Wooldridge many years ago.

A. (1) Tissue "fibrinogen" (protein-cephalin compound) plus blood fibrinogen plus calcium equals fibrin (plus cephalin plus prothrombin).

He regards the prothrombin in the blood as in loose chemical combination with the blood fibrinogen. Cephalin is freed by the above reaction, so that the second mode of fibrin formation is started.

B. (1) Cephalin plus prothrombin plus calcium equals thrombin. (2) Thrombin plus fibrinogen equals fibrin.

And, he says, for every molecule of fibrin formed in this last reaction, eight molecules of cephalin and eight of prothrombin are liberated, so that the reaction goes faster and faster until the clot is complete. Practically, we do not see that it makes very much difference which theory is followed, although perhaps Howell's theory attaches more importance to the thrombocytes or platelets. Mills says platelets liberate "tissue fibrinogen" and also some free cephalin.

In purpura hemorrhagica, as you know, the platelets are decreased in number. This may be due to destruction of the megakaryocytes from which they are formed, to less activity of the megakaryocytes, or to more rapid destruction of platelets after they are formed. At any rate it is easy to see, either on Howell's or Mills' view, why sufferers from purpura would be bleeders. Platelets are the most

important source of thrombokinese, and probably supply some prothrombin as well. Mills believes the retraction of the clot as it normally occurs, is due to the protein-cephalin compound, or "tissue fibrinogen". Why it should cause retraction is not clear, but if the platelets are lacking, it at least explains the loose clot in purpura. The cause of the petechiae or ecchymoses of the skin is something concerning which we have found nothing, except that it is apparently related in some way to the low platelet count. We suspect that the explanation is yet to be given and may be found in part in the capillary walls. It is apparently not due to lack of thrombokinese, or it would occur in true hemophilia.

That there is another factor absent than tissue fibrinogen is evident, because the administration of tissue (Fibrogen, Merrill) sufficed to control the hemorrhage of our case for less than three hours. To watch the effect of the oral administration of fibrinogen in this case, was very interesting. The bleeding stopped almost as promptly as turning off water from a spigot within a few minutes of the swallowing of the coagulant, and started with almost the same promptness. The hypodermic administration of fibrinogen was followed by such an enormous hematoma, and so much pain to our little sufferer, that we dared not repeat it.

That the failure of clot shrinkage is not due entirely to platelets in this child is evidenced by the results of transfusion and whole blood injection.

Estimating the weight at 20 kilo, and supposing eight per cent of this to be blood, we would have 1,600 cc. Now we gave 110 cc or a total of about 1/15 of

the whole by transfusion. In the mother's blood, if we have a normal platelet count of say 400,000 after transfusion the child should have about a 30,000 platelet count, or sufficient to materially aid clotting, which it did, for eight hours only.

But in administering only 8-10 cc intramuscularly, we got no platelets into the blood stream (they being used up in the local clot forming at the point of injection). Still a hemostasis for 20 hours repeatedly resulted. This raises a question as to what actually does happen. Is some substance liberated from the area of injection, which activates clot shrinkage? If so, is the same substance in the whole blood administered by transfusion? If in the blood given by vein, is it exhausted more quickly on account of being administered thus?

It would suggest, in this case, some activating agent, or agents, not platelets, but from disintegration of clot, slowly absorbed from the local area of injection, possibly cephalin and prothrombin.

We of course did not punish this child by the administration of ergot, calcium, and various other drugs, which could only add to her discomfort and would do no possible good.

As our hemoglobin estimation is ever showing an improvement we will delay recourse to a splenectomy until we feel she is fully able to cope with the vicissitudes of so formidable an operation, in spite of our platelet count being very low. However, should she again set up bleeding, we will promptly advise removal of the spleen.

Please understand that our observations are confined to this child alone, and she is not cured at present.

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HYPERTENSION.

In recent years, during our work in preventive medicine, periodic health examinations, and the prolongation of the span of human life, our interest and attention has been repeatedly focused upon the degenerative diseases. Of these disorders those of the cardiovascular apparatus stand out in importance, and chief among them is hypertension. This symptom complex of elevated arterial tension has been extensively studied as to incidence, type, cause and treatment. It is interesting, therefore, to study the conclusions and results of a

follow-up study of this disease entity by Blackford, Bowers and Baker.* Their series consist of 401 cases of hypertension from 10,000 general examinations made over a period of from five to twelve years prior to the study. All of these patients included had a systolic pressure of 175 or more. These were subdivided into two large groups, essential hypertension and hypertension associated with other diseases.

It was found that although the 10,000 cases were evenly divided as to male and female, 65 per cent of the cases of hypertension were females. A family history of hypertension was noted in one-third of all the histories.

The follow-up study was successful in 222 patients or 55 per cent of the cases available. Twenty of these died shortly after the first examination and were excluded, leaving 202 cases in the final study. Of these 101 were dead, a mortality of 50 per cent. It is significant to note that the average length of life following examination was 35 months. Also that while 65 per cent of the cases of hypertension were female the mortality in females was only 39 per cent, while in males it was 70 per cent. Cerebral hemorrhage was the commonest cause of death, then heart disease and thirdly, unremia.

The authors cite a few very exceptional instances of patients with excessively high pressure living comfortably for many years. On the other hand there was no tendency toward recovery. It is interesting also to notice that the prognostic value of blood creatinine readings was very disappointing.

*Blackford, J. M.; Bowers, J. M., and Baker, J. W.: Follow-up study of hypertension. *J. A. M. A.*, 94:328-333, 1930.

MEDICAL MOTION PICTURES.

A recent bulletin of the American College of Surgeons announces the availability of a group of educational medical films made under the supervision of their Board on Medical Motion Picture Films by the Eastman Company. The subject of the films are varied in scope, including demonstrations of surgical technic, pathology, physiology and microscopy.

Such an enterprise is to be commended. Certainly properly made motion pictures should be very instructive and interesting, and of value in the education of medical students and practitioners as well.

The films are for sale and may also be rented. The charges are rather nominal. Certainly it seems that medical groups would find it a very good investment in furthering their own amusement and instruction by securing films to be shown at medical meetings. Certainly such an innovation, if possible, would also stimulate attendance and interest.

C. GRENESE COLE.

Dr. C. Grenese Cole was inaugurated President of the Orleans Parish Medical Society after being elected unanimously. This indicates very definitely the feeling that the New Orleans profession has for the new president of their organization. It shows how well liked he is and how popular he is with his colleagues. Dr. Cole has been

intimately associated with medicine in New Orleans since 1908, when he graduated from the Tulane Medical School. Previous to this he had been an interne at the Charity Hospital for two years, and after graduation was House Surgeon at Hotel Dieu for a year and Assistant House Surgeon at Charity Hospital for five years. He finished his term of service there in 1914. Dr. Cole has been connected with the Charity Hospital in one form or another since leaving the House Staff. In addition to his membership in the Local, State and National Societies of organized medicine, he is a member of the Southern Medical Association and the American College of Surgeons.

The Journal extends its felicitations to Dr. Cole and wishes for him a happy tenure of office.

DALLAS SOUTHERN CLINICAL SOCIETY.

Attention is called to the clinical meeting under the auspices of the Dallas Southern Clinical Society which will be held the week of April 14. The Committee in charge of the meeting has prepared a splendid program, one which will well repay the physician who finds time or makes it, to attend. This clinical gathering will be addressed by men well known throughout the country. In addition to these instructive talks there will be clinics and a considerable number of special motion picture films of a scientific nature will be shown.

HOSPITAL STAFF TRANSACTIONS

FRENCH HOSPITAL STAFF.

The regular meeting of the French Hospital Staff was held on Friday, December 13, 1929, Dr. T. A. Jung presiding. The minutes of the last meeting were read and approved. Those present at the meeting were: Drs. T. A. Jung, M. J. Lyons, E. L. Zander, F. J. Beyt, R. L. Gordon, F. L. Loria, M. Lescale, F. Gallo, E. N. Haller, H. B. Alsobrook, L. L. Cazenavette, P. H. Jones, K. Harvard, G. L. Smith, J. N. Ane, H. F. Ader, F. B. Faget, C. P. Holderith, P. Graffagnino, W. H. Harris, L. M. Thomason, M. O. Miller, G. G. Richard, R. F. Sharp, G. C. Anderson, C. Tardo, D. N. Silverman.

A letter from the American College of Surgeons was read, and a general discussion of this letter followed.

Dr. E. L. Zander gave a brief extract of the deaths occurring during the month of November. The first case brought up for discussion was one where death resulted from lobar pneumonia. The case was reviewed by Drs. W. H. Harris, M. O. Miller and P. H. Jones.

The next case discussed was a death resulting from chronic myocarditis, pyonephrosis, chronic interstitial nephritis, and chronic cystitis. This case was discussed by Dr. R. L. Gordon.

The third case was a death resulting from toxemia of pregnancy, yellow atrophy of the liver, and acute nephritis. This case was discussed by Drs. F. J. Beyt, P. Graffagnino, F. L. Lorio, W. H. Harris.

The specific program for the evening was a report by Dr. P. Graffagnino on the use of sodium amytal to produce anesthesia in surgery and obstetrics. Dr. Graffagnino gave a brief history on the use of sodium amytal and the methods of administering the drug. The salient points of the report were: that though sodium amytal is the best anesthesia of its kind at present; it is far from perfect since the dosage is too large; there is no method of controlling the drug once it has been administered, and it produces restlessness in obstetrics.

The paper was discussed by Drs. H. B. Alsobrook, M. Lescale, F. L. Lorio, W. H. Harris, P. H. Jones, E. L. Zander.

There being no further business, the meeting adjourned.

E. L. ZANDER, M. D.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL.

Staff Meeting, February 10, 1930.

Abstract: Pancreatic Cyst — Dr. J. A. K. Birchett, Jr.

Patient: White female, aged 48 years, three children; admitted to hospital December 16, 1929.

Chief Complaint: Pain in pit of stomach six months; nausea and vomiting. In May, 1929, began having indigestion, belching, and pain in back; colicky pain in pit of stomach and down right side of abdomen. Pain not influenced by food. Appetite good. Vomiting during last three months, no blood. Bowels constipated. Lost 74 pounds since February, 1929.

Past History: At 35 years of age complained of indigestion which she has had ever since. Has had three normal children; has not menstruated since she was 41 years of age. Otherwise irrelevant.

Family History: No history of tuberculosis or cancer.

Physical Examination: Fat, middle-aged negro female. Temperature, 98° F.; pulse, 104; respiration, 18; blood pressure, 140/80. Oral hygiene fair; tonsils, negative; thyroid, negative; heart, rapid, regular, slight systolic blow at apex. Lung essentially negative. Abdomen very fat and pendulous; pain elicited in epigastric region on pressure and a mass palpated. Mass pulsated with abdominal aorta and was located either in stomach or liver, or possibly in pancreas. Pelvic examination showed nothing of interest, skin negative. Reflexes negative.

Blood: Leukocytes, 6,700; differential leukocyte count, small lymphocytes, 35; large mononuclears, 4; polymorphonuclear neutrophils, 63. No malaria. Wassermann and Kahn tests negative. Urine, turbid, acid plus, sp. gr., 1.029; large trace of albumin; marked indican; numerous hyaline and finely granular casts; some blood cells. Gastric contents, total acid, 15; no free hydrochloric acid; chemical blood, positive (1 plus).

Roentgen-ray and fluoroscopic study showed constant deformity of stomach, suggestive of carcinoma.

Summary: History of the case with continued loss of weight and pain and other digestive symptoms, gastric analysis, and radiographic studies were suggestive of carcinoma of the stomach. It was decided to explore the abdomen and after several days of pre-operative preparation with daily gastric lavage and daily administration of glucose, the patient was in excellent condition.

Operation: Upper mid-line incision into peritoneal cavity which was completely sealed off by heavy fatty omentum. Omentum was released by breaking dense adhesions to parietal peritoneum; the colon and stomach were then identified and drawn upward out of the wound. There was no mass or growth in the stomach but a large cystic mass, size of grape fruit, was identified below the colon and lying between the leaves of the mesocolon. As the peritoneum was dissected away after cutting through the leaf of the mesentery, the mass was noted to be from the pancreas and to have some tissue incorporated in its wall at its base where it was very thick. Dissection of the cyst was abandoned after encountering prolific blood supply, and as it was not thought to be malignant, simple drainage was done. The fluid was a muddy yellow color. The fistulous tract from the cyst drained freely for several days, but after removal of the tubes, the drainage became less, and when patient was discharged there was only a slight amount. Patient was discharged in good condition on the sixteenth post operative day.

Abstract: Pancreatitis, Acute, Recurrent—Dr. A. Street.

Patient: White female, aged 48 years, admitted December 16, 1929.

Chief Complaint: Acute abdominal pain, duration five days, nausea, vomiting and slight fever. Bowels have been kept open with cathartics. The pain is located in right upper quadrant; no radiation. No jaundice.

Previous History: Patient has had frequent attacks of right upper quadrant abdominal pain, usually coming on shortly after eating. There has been much feeling of distention. A few of these attacks have been severe and with fever, the last one about three months ago. Onset of digestive symptoms was about four years ago.

Past History and Family History: There has been no typhoid, no scarlet fever, no diphtheria and no surgical operations. Menopause occurred recently.

Physical Examination: No important findings except definite tenderness in upper abdomen, more marked on the right. Temperature, 99.8° F.; pulse, 90; respiration, 20. Patient is slightly stout. Does not appear very acutely ill.

Blood count on admission showed leukocytes, 17,000 per cu. mm., with 90 polymorphonuclear neutrophils. Urine examination showed nothing remarkable. Roentgenogram of gall-bladder without dye showed a large soft oval shadow in the gall-bladder region which was considered as the gall-bladder.

Procedure: The patient improved on palliative treatment, temperature and blood count promptly falling to normal. On December 17, cholecystography showed only the same soft shadow which had previously been considered to be the gall-bladder.

On December 18, abdomen was explored through a high right paramedian incision. The appendix showed marked chronic inflammation and was removed. The gall-bladder was enormously dilated, otherwise apparently normal; it contained no calculi. Bile ducts appeared normal. The pancreas showed areas of induration. Diagnosis of pancreatitis was made. Cholecyst-duodenostomy by the suture method was easily done and the wound closed.

Convalescence was uneventful, the wound healing by primary union. Patient was discharged from the hospital on January 11, 1930. Word from her during the past few days states that she has no complaint.

Abstract: Abscess of Lung—Dr. L. J. Clark.

Patient: White male, aged 33 years, married, farmer; admitted to hospital January 15, 1930.

Chief Complaint: Fever and chilly sensations; weakness; sweating; loss of weight (25 pounds in six weeks). Pain in lower right side of chest and right shoulder; slight cough.

Onset six months ago with pain and cramping in back; fever; aching; profuse sweating. Pain in back lasted about two weeks. No urinary symptoms. Later began having what is called rheumatism, involving all joints about the same time. Then developed what was called pleurisy of right side, with cough, painful breathing, excruciating pain on exertion, unable to rest except on right side. This condition lasted about three weeks. Six weeks ago developed a somewhat similar pain on the left side, under rib margin, and aggravated by movement. Fever and chilly sensations have continued at intervals and at present pain is in left lumbar and splenic region. Appetite fair; food does not disagree. Bowels constipated.

Past History: Has had measles, whooping-cough, chicken-pox, pneumonia twelve years ago, influenza in 1918. Has had no rheumatism except during present illness; several attacks of tonsillitis; no accidents; no surgical operation. Drinks alcoholics moderately; has been a large eater, preferring meats. Smokes cigarettes moderately.

Family History: Irrelevant.

Physical Examination: Temperature, 100° F.; pulse, 100; respiration, 18; blood pressure, 100/60. Fairly well developed but poorly nourished; ap-

parently comfortable but ill. Head, not remarkable; complexion somewhat sallow; sclera jaundiced. Neck, not remarkable. Mouth, few good front teeth; other teeth have been removed. Tonsils apparently not diseased. Thorax, heart accelerated, not enlarged; soft systolic murmur at apex. Lungs, some slight apparent lagging on left side; slight dullness lower posterior left; diminished breath sounds lower left; no rales; fremitus diminished. Abdomen, soft; no masses. Definite tenderness in upper left quadrant; abdomen somewhat sore generally and costo-phrenic region is tender; no distention; spleen palpable. Physical examination otherwise not remarkable.

Blood: Hemoglobin, 62 per cent; erythrocytes, 3,864,000; leukocytes, 19,400; polymorphonuclear neutrophils, 85; no malaria. Blood Wassermann and Kahn tests negative. Blood culture, no growth in three weeks. Widal test for typhoid and para-typhoid, negative. Agglutination test for undulant fever, positive, titre 1 to 620. Urine, voided specimen, large trace of albumin and few fresh red blood cells. Cystoscopic, right and left, not remarkable.

Sputum: Some elastic fibres; some pus; no tubercle bacilli found; numerous gram positive streptococci.

Gastric Contents: Total acidity, 20; no free hydrochloric acid; chemical blood, positive (2 plus); slight trace of lactic acid.

Roentgen-ray: Thorax, left diaphragm higher than right; homogeneous, increased density of left side, marked at base; upper left and hilus somewhat mottled. Genito-urinary tract, negative. Gastric series, stomach somewhat atonic, slightly enlarged duodenal cap.

Procedure: Lower left chest was aspirated and small amount of amber colored fluid was withdrawn. Microscopic examination showed many pus cells, no organisms; cell count, 4,590; differential leukocyte count, small mononuclears, 5; large mononuclears, 52; polymorphonuclears, 43. Culture showed gram positive *Staphylococcus albus*. On January 19, about 800 cc. of air was let into the left pleural cavity, chiefly for diagnostic purposes. Roentgenogram then showed a partially collapsed lung with the exception of an irregular dense area at the left base apparently adherent to diaphragm. Three days later, patient began expectorating large amounts of purulent, bloody mucoid material with very foul odor, sometimes as much as six ounces at one paroxysms of coughing. On January 20, lower left posterior chest was explored with needle and purulent blood tinged material removed. Microscopic examination of fluid showed numerous gram positive streptococci. Culture showed gram positive *Staphylococcus albus* and some gram negative bacilli.

On January 30, left thoracotomy as done with resection of a portion of ninth rib beneath angle of scapula. On incision of pleura, there was a very thin layer of lung adherent to it. This was entered bluntly with forceps, exposing a cavity $3\frac{1}{2}$ inches in diameter and containing a slimy chocolate colored foul pus. There were three free gangrenous fragments of lung tissue in the cavity, the largest 5×1 inch. Tube drainage was provided.

Temperature has subsided rapidly and patient showed marked improvement. The cough and expectoration have stopped.

Agglutination test for undulant fever on February 11, was negative.

Abstract—Osteomyelitis of the Mandible—Dr. H. H. Johnston.

Patient: Colored male, aged 32 years, laborer, admitted December 24, 1929.

Chief Complaint: Pain and swelling of the right side of lower jaw.

Present Illness: Onset two weeks before admission with severe toothache, third right lower molar. Consulted his dentist and extraction was attempted under local anaesthesia. Tooth was loosened in its socket but not removed and patient was advised to return in four days. Pain was intense following this procedure and swelling of the surrounding soft parts soon appeared. One week later he went to a dentist in another city and a part of the tooth was removed. Pain continued and swelling increased gradually. The following day a purulent discharge appeared at the site of extraction. The swelling gradually involved the entire side of the face and had extended downward into the neck at the time of admission to the hospital.

Past History: Malaria in 1928. Otherwise past health has always been excellent.

Family History: No history of tuberculosis or cancer.

Physical Examination: Temperature 103°F. ; Pulse 100; Respiration 20. Patient is robust and well nourished. There is marked swelling over the right side of the mandible, extending over the entire right side of face and producing almost a complete closure of the right eye. It also extends downward over the right side of the neck. There is considerable thickening of the tongue and a purulent discharge is exuding from the socket of the right third lower molar tooth. The breath has a fetid odor. The tonsils are enlarged and inflamed.

Physical examination otherwise reveals nothing remarkable.

Blood: Hemoglobin 77 per cent; leukocytes, 22,000; differential leukocyte count, small lympho-

cytes, 9; large mononuclears, 6; polymorphonuclear neutrophils, 85 with 61 immature forms. Wassermann test, positive (1 plus); Kahn test, positive (2 plus). Urine—Albumin 1/24 of 1 (by weight); rare pus cells; specific gravity, 1.030. Roentgenogram made twelve days after admission showed extensive osteomyelitis of the mandible, right side.

Procedure: Patient was treated palliatively until January 14. At that time swelling became fluctuant and began pointing near the angle of the mandible on the right side. An incision was made under local anaesthesia at point of maximum fluctuation and a large amount of pus was evacuated, stained smears showed some gram negative fusiform bacilli and spirilla and numerous gram positive streptococci. Culture showed gram positive streptococci.

The wound was irrigated daily with warm Dakins solution and discharge and swelling gradually decreased. Seven days later another pocket localized in right sub-mental area. This was also incised and irrigated. Since that date discharge and swelling have gradually decreased and fever has subsided. Our next step will be to remove the sequestra after applying a dental splint to prevent fracture or to attain good alignment of teeth should fracture occur.

CHAMBERLAIN-RICE CLINIC.

At the January meeting of the Staff of the Chamberlain-Rice Clinic, Natchez, the following special case reports were presented:

1. Ectopic gestation with tubal abortion, negro woman, aged 24 years, complicated by marked hemorrhage and multiple subperitoneal fibroids. Rupture (abortion) occurred 24 hours prior to admission, with marked shock. Auto-transfusion of blood from peritoneal cavity; supra-vaginal hysterectomy. Uneventful recovery. Dr. Charles T. Chamberlain.

2. Recto-cecal, gangrenous appendix, white, male, aged 45 years. Ill about 20 hours with indefinite pain and some vomiting, but no abdominal tenderness or rigidity; white cell count, 21,000. Appendix removed without rupture. Uneventful convalescence. Dr. Charles T. Chamberlain.

3. Gunshot wound of left hip, colored female. Fracture of coccyx, bullet penetrating to trochanter of right femur, perforating rectum below peritoneal reflection. Probable nerve injuries. Incon-

tinence of feces and retention of urine. Dr. J. C. Rice.

4. Adeno-carcinoma of right ovary, with marked metastases to liver, stomach, intestines and omentum, white, female, aged 45 years. Nullipara. Laparotomy. Eight gallons of sero-sanguinous fluid drained from peritoneal cavity. In spite of extent of metastases, patient appeared to be in fair general condition and symptoms were due almost entirely to amount of fluid present. Dr. Charles T. Chamberlain.

J. G. Logan, M. D., Secretary.

CHARITY HOSPITAL SURGICAL STAFF.

The regular monthly meeting of the staff was held on January 15. The meeting was opened by Dr. H. B. Gessner, who read an interesting short paper on "Postoperative Treatment." Dr. Gessner covered several of the major complications following operations. The matter of transfusion was well covered, and the substitute of acacia and sodium chloride solutions discussed completely. He pointed out that this substitute for blood has been said to be of great benefit, at least until some blood is obtained. He also very thoroughly discussed the persistent vomiting that one sometimes sees following an operation. In addition, the subjects of scanty urination pneumonia and gastro-mesenteric ileus were thoroughly discussed. Dr. C. J. Miller in discussing Dr. Gessner's paper commented on the use of aspirin in the relief of pain postoperatively. Dr. Maes also discussed the paper.

Dr. E. L. King then followed with a discussion of blood transfusion. Many points of interest and of great importance were stressed. The various methods in vogue were reviewed and their applicability discussed. One of the points of concentration was the matter of securing donors in the hospital. It was stated that as a rule this is a problem accompanied with much difficulty. At the conclusion of his talk, Dr. King asked the section to take up the consideration of having a special committee appointed in order to study and report on this problem. Such a committee was appointed with Dr. E. L. King as chairman.

Dr. Hilliard Miller pointed out the great benefits derived in the treatment of septic cases with frequent small whole blood transfusions.

A synopsis of the first death to be discussed was read by Dr. Rives. This was a case of gun shot wound of the abdomen eviscerating six days following operation and dying of general peritonitis.

Dr. Rives briefly discussed the subject of evisceration and this was followed by a general discussion on abdominal gunshot wounds by Dr. E. L. King, Dr. Mattingly, Dr. Snelling and Dr. Maes. Dr. Maes mentioned particularly the time factor concerned in these cases of gunshot wounds of the abdomen. He said that those cases over eight hours old should probably not be operated on. At least this was the rule followed through the war. The reasons given were that hemorrhage kills the greatest percentage of these cases, and therefore if they are not dead within eight hours they should be left alone, as adhesions formed by nature will very probably take care of whatever damage has been done.

Dr. W. A. Reed presented the synopsis of the next case, which was that of a white male, 27 years of age, who had been operated on several months previously and a number of stones removed from the region of his right kidney. He returned to have this kidney removed. An attempt was made to remove this kidney, but the great difficulties encountered made it necessary to discontinue the operation. The patient subsequently developed a duodenal fistula and died in a short time later. This case was thoroughly discussed by Dr. Gessner, Dr. Reed, Dr. Maes and Dr. Fenner.

Frank L. Loria, M. D.

FRENCH HOSPITAL.

The regular meeting of the Staff was held on Friday, January 10, 1930, Dr. T. A. Jung presiding. The minutes of the last meeting were read and approved, and the report representing the patients discharged during the month of December 1929 was read. Those present at the meeting were: Drs. R. L. Gordon, J. N. Ane, F. Gallo, L. L. Rolling, J. P. Palermo, M. L. Stadiem, H. B. Alsobrook, R. J. Spedale, G. G. Richard, C. L. Cox, P. Graffagnino, L. J. Menville, J. Locascio, E. M. Warner, M. Lescale, D. N. Silvermann, H. F. Ader, E. Socola, R. F. Sharp, M. J. Lyons.

The deaths occurring during the month of December were as follows: Baby A.—A white male child delivered by cesarean section. On extraction, fetal heart sounds were faint and there was some bleeding from the nose. The child died one hour after birth. Primary cause of death was cerebral hemorrhage.

Mrs. D.—A white female, aged 68, was re-admitted to the hospital for carcinoma of the right breast. The patient was dyspneic and showed evidence of pulmonary involvement. Her condition gradually became worse and she died fifteen days after admission. Primary cause of death—Recurrent carcinoma of the breast. Contributory cause—Pulmonary metastasis.

Mrs. B.—A white female, aged 38, was admitted to the hospital for delivery. After a test labor with no progress and no engagement a cesarean section was decided upon. The patient left the table in good condition. The following day, the patient's fever rose to 102°. The patient's condition rapidly became worse and despite all treatment she died four days after delivery. Primary cause of death—Peritonitis. Contributory cause—Circulatory failure, and toxemia.

Baby P.—A white female 2, was admitted to the hospital with a diagnosis of lobar pneumonia. The child's temperature was then 104, her pulse 112, and her respiration 48. The patient's condition became worse and she died two days after admission. Primary cause of death—labor pneumonia. Contributory cause—Toxemia, circulatory failure.

Mr. L.—A white male, aged 25, was admitted to the hospital per ambulance with a diagnosis of lobar pneumonia. This patient died nine hours after admission. Primary cause of death—Lobar pneumonia. Contributory cause—Circulatory failure and toxemia.

Mr. P.—A white male, aged 40, was admitted to the hospital with a diagnosis of right sided lobar pneumonia and acute alcoholism. The patient showed signs of improvement for some seven days and then he began to run a hectic temperature. Examination at the rise of the temperature gave indications that the pneumonic process was beginning in another part of the lung. In spite of the hectic temperature, the patient showed signs of improvement and he was preparing to go home when he was overtaken by death. Primary cause of death—Lobar pneumonia. Contributory cause—Coronary thrombosis.

There was a general discussion of each of these deaths.

The election of Staff Officers for the year 1930 were as follows: Dr. M. J. Lyons Chairman; Dr. H. B. Alsobrook, Vice Chairman; Dr. E. L. Zander, Secretary-Treasurer; Executive Committee, Drs. W. H. Harris, P. Graffagnino, R. L. Gordon, T. A. Jung. Records and Scientific Program Committee, Dr. M. L. Stadiem, E. L. Zander.

Dr. P. Graffagnino announced that the French Hospital Board of Directors was anxious to cooperate with the Staff and to assist the Staff in every possible way.

Dr. H. B. Alsobrook suggested that members of the Staff be notified by letter whenever deaths occurring on their service were to come up for discussion at Staff Meeting.

E. L. ZANDER, M. D.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

March 3.—Eye, Ear Nose and Throat Hospital Staff, 8 P. M.

March 7.—Pathological Conference Hotel Dieu, 10-11 A. M.

March 7.—Physiology Seminar, Tulane University, 5 P. M.

March 10.—*ORLEANS PARISH MEDICAL SOCIETY*, 8 P. M.

March 11.—Baptist Hospital Staff, 8 P. M.

March 12.—Touro Infirmary Staff, 8 P. M.

March 14.—Pathological Conference, Hotel Dieu, 10-11 A. M.

March 14.—Physiology Seminar, Tulane University, 5 P. M.

March 14.—Medical Reserve Corps Branch School, 8 P. M.

March 17.—Hotel Dieu Staff, 8 P. M.

March 18.—Charity Hospital, Medical Section, Jung Hotel, 12 Noon.

March 19.—Charity Hospital Surgical Section, 8 P. M.

March 20.—I. C. R. R. Hospital Staff, 12 Noon.

March 20.—Eye, Ear, Nose and Throat Club, 8 P. M.

March 21.—Pathological Conference, Hotel Dieu, 10-11 A. M.

March 21.—Physiology Seminar, Tulane University, 5 P. M.

March 21.—French Hospital Staff, 8 P. M.

March 24.—*ORLEANS PARISH MEDICAL SOCIETY*. Joint Clinical Meeting with the Charity Hospital Staff, 8 P. M.

March 28.—Pathological Conference, Hotel Dieu, 10-11 A. M.

March 28.—Physiology Seminar, Tulane University, 5 P. M.

March 28.—Medical Reserve Corps Branch School, 8 P. M.

SECRETARY'S REPORT.

During the month of February the Society held two meetings. February 10 the Society held its annual joint meeting with the New Orleans Gynecological and Obstetrical Society. Dr. Otto H. Schwarz, Professor of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis was

the guest of the evening and presented a very interesting paper on the "Changes in the Blood in Pregnancy and Late Toxemias with Special Reference to Colloid Stability."

At the Meeting held February 24 the following program was presented:

SYMPOSIUM ON UNUSUAL CONDITIONS OF PRESENT INTEREST.

Malta Fever.

By:..... Dr. C. L. Eshleman

A Note on Psittacosis.

By:..... Dr. H. Dickson Bruns

Psittacosis. A Review.

By:..... Dr. Willard R. Wirth

Tularemia.

By:..... Dr. Herbert E. Cannon

Discussed by Drs. W. C. Rucker, C. W. Mattingly, M. Earle Brown, H. E. Bernadas, H. Dickson Bruns, John A. Lanford and Chas. J. Bloom.

These meetings were very well attended.

The President has appointed the following committees for 1930:

JUDICIARY COMMITTEE: Dr. Frank J. Chal-aron, Chairman; Drs. S. M. Blackshear, H. B. Gessner, Roy B. Harrison and F. M. Johns.

SCIENTIFIC ESSAYS COMMITTEE: Dr. E. L. King, Chairman; Dr. M. Earle Brown, Dr. Chaille Jamison, Dr. P. A. McIlhenny and Dr. Alton Ochsner.

AUDITING COMMITTEE: Dr. E. H. Walet, Chairman, Dr. G. W. Faivre, Dr. A. V. Friedrichs, Dr. Lucien A. LeDoux and Dr. Sidney K. Simon.

CONDOLENCE COMMITTEE: Dr. W. H. Harris, Chairman; Dr. A. Jacobs, Dr. Allen J. Jumel, Dr. John Smyth and Dr. E. A. Socola.

STATE MEDICINE AND LEGISLATION COMMITTEE: Dr. Paul J. Gelpi, Chairman; Dr. J. A. Danna, Dr. F. F. Gomila, Dr. W. F. Henderson and Dr. Solon G. Wilson.

LIBRARIAN'S REPORT COMMITTEE: Dr. J. A. Lewis, Chairman; Dr. T. E. Clements, Dr. G. A. Cronan, Dr. E. L. Leckert and Dr. J. D. Weis.

PRESIDENT'S REPORT COMMITTEE: Dr. Chaille Jamison, Chairman; Dr. John F. Dicks,

Dr. Homer Dupuy, Dr. C. Jeff Miller, Dr. W. A. Love, Dr. W. D. Phillips and Dr. W. H. Seemann.

SECRETARY'S REPORT COMMITTEE: Dr. E. McC. Connely, Chairman; Dr. O. C. Cassegrain, Dr. C. F. Gelbke, Dr. M. J. Gelpi, Dr. F. J. Hartley, Dr. A. L. Levin and Dr. W. R. Metz.

TREASURER'S REPORT COMMITTEE: Dr. H. W. Kostmayer, Chairman; Dr. C. J. Brown, Dr. J. C. Cole, Dr. J. E. Landry, Dr. M. J. Lyons, Dr. I. M. Gage and Dr. Arthur Vidrine.

HOSPITAL ABUSE COMMITTEE: Dr. A. E. Fossier, Chairman; Dr. H. W. Kostmayer, Dr. M. P. Boebinger, Dr. J. W. Lindner, Dr. P. B. Salatch and Dr. R. H. Potts.

LIBRARY COMMITTEE: Dr. D. N. Silverman, Chairman; Dr. Lucien A. Fortier, Dr. John A. Lanford, Dr. Randolph Lyons and Dr. Leon J. Menville.

PUBLICITY COMMITTEE: Dr. J. H. Musser, Chairman; Dr. Henry Daspit and Dr. P. T. Talbot.

PERIODIC HEALTH EXAMINATIONS: Dr. Leon J. Menville, Chairman; Dr. H. E. Bernadas, Dr. T. J. Dimitry, Dr. F. L. Fenno, Dr. Maud Loeber, Dr. H. R. Unsworth and Dr. M. T. Van Studdiford.

SPECIAL NOTICE.

Bills were sent out to the membership for 1930 dues for both the Orleans Parish and Louisiana State Medical Societies. The members are asked to pay their dues in full, if possible, as this relieves some of the clerical work in the office. The State Society dues which are seven dollars (\$7.00) are payable in advance. Medical defense starts only from the day we receive your check. PLEASE GIVE THIS YOUR PROMPT ATTENTION.

The second quarterly premium on group insurance will be due March 5 and amounts to \$11.25. The members carrying this insurance are requested to send in their checks at once.

The following doctors were elected to Active Membership: Drs. Amos Graves and Elias Weiner.

TREASURER'S REPORT

Actual Book Balance, Dec. 31, 1929.....	\$1,737.49
Receipts	2,810.08
	<hr/>
	\$4,547.57
Expenditures	\$2,583.83
	<hr/>
ACTUAL BOOK BALANCE 1/31/30.....	\$1,963.74

LIBRARIAN'S REPORT

During the first month of 1930, 24 books have been added to the Library. Of these 10 were received from the New Orleans Medical and Surgical Journal and 14 by gift. Two cases of journals have been prepared and sent to the bindery.

A very interesting feature in the work of the Library for the past several months has been the growing use of the collection in connection with particular cases in practice, as well as in the preparation of papers. Calls of this nature are increasing very rapidly, bespeaking the healthy attitude of interest in the Library as a help in everyday practice.

NEW BOOKS

- Levine—Coronary Thrombosis. 1929.
- Dooley—Intern's Handbook. 1929.
- McPheeters—Varicose Veins. 1929.
- Rundle—Ker's Infectious Disease. 1929.
- Eberts—Surgical Disease of the Thyroid Gland. 1929.
- Cherry—Gynecologic Technic. 1929.
- White—Stone in the Urinary Tract. 1929.
- Elwyn—Edema. 1929.
- Friedenwald—Pathology of the Eye. 1929.
- Turrell—Principles of Electotherapy. 1929.
- Amer. College of Surgeons. Yearbook. 1930.
- Newark, N. J. Annual Report Department. 1930.

H. THEODORE SIMON, M. D.
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

LOUISIANA STATE MEDICAL SOCIETY MEETING

Shreveport is to be honored with the meeting of the Louisiana State Medical Society this year, and Shreveport as usual will do itself proud in the entertainment and comfort of her guests. Big things are already under way, and when the meeting dates roll around everything will be in apple pie order.

All of the committees are working, and they all report much progress. The scientific exhibits committee have obtained a nice lot of exhibits which will be pleasing and profitable. The entertainment committee has been working overtime and all will be merry when the meeting is held, for a big entertainment in the form of a play will be the feature. Also a big banquet, as per custom, but with trimmings that are too numerous to mention. Golf will be had at our three courses, and a big tournament is being arranged and handsome prizes offered to the champion.

Luncheons will be served at the various local hospitals and clinics are being arranged at the Shreveport Charity Hospitals. These will be announced at the proper time on the bulletin boards. Automobiles will be available at all times during the meeting and for the special occasions.

The hotel committee has secured plenty of accommodations for all, but make your reservation early. Dr. W. S. Kerlin will take care of this for you if you desire.

The ladies will not be neglected, for the Auxiliary is functioning actively and a series of entertainments have been planned. Be sure to bring the ladies because we want them.

The following doctors constitute the chairmen of the various committees:

Dr. J. M. Bodenheimer.....	General Chairman
Dr. W. S. Perlin.....	Hotels
Dr. R. H. Blackman.....	Commercial Exhibits
Dr. W. P. Butler.....	Scientific Exhibits
Dr. B. C. Garrett.....	Transportation
Dr. Frank H. Walke.....	Publicity
Dr. J. M. Gorton.....	Finance
Dr. C. R. Gowen.....	Banquet
Dr. C. P. Rutledge.....	Lanterns
Dr. A. J. Thomas.....	Signs and Decorations
Dr. M. S. Picard.....	Registration
Dr. O. C. Rigby.....	Badges
Dr. Milton Smith.....	Golf
Dr. J. A. Hendrick.....	Luncheons
Dr. E. L. Sanderson.....	Clinics
Dr. G. A. Caldwell.....	Entertainment at Banquet

Be sure and come to this meeting, for Shreveport expects to show you a good time. Remember the date, April 29, 30 and May 1. Place, Shreveport.

REDUCED RAILROAD FARE TO ANNUAL MEETING AT SHREVEPORT.

Your attention is especially called to the special reduced rates provided by the railroads entering Shreveport. Arrangements have thus been made for a one and one-half fare subject to the following requirements:

It is essential that we have one hundred (100) certificates from those registered at the meeting. This may include physicians, their families or their guests. When purchasing tickets to Shreveport for the Annual Meeting ask for the certificate receipt from the Agent, and upon registering at the Annual Meeting deliver this receipt to the Registration Office. These will then be properly validated and returned to you for use in securing return passage to your home. It is the one-half reduction on the return fare that is essential, predicated on your turning in the certificate receipt and having same properly validated. The prompt turning in of these certificates at the Annual Meeting will facilitate the early validating, in order that those who may desire to return at an early date may avail themselves of the opportunity. Your cooperation is therefore essential for the successful operation of this privilege.

From information secured, a considerable amount of the highways are in a state of reconstruction in and around Shreveport, and we feel certain that a large number of the doctors would thus avail themselves of railroad transportation. For further information concerning railroad facilities I would refer you to page 30 of the Advertising Section.

P. T. TALBOT, Sec'y.-Treas.

NEWS AND COMMENT

Vacation escorted tours to Europe for medical co-workers and their friends can be arranged through the Hibernia Bank Travel Bureau of the Hibernia Bank and Trust Company.

Dr. H. W. E. Walther, New Orleans, was guest speaker at the quarterly meeting of the St. Tammany Parish Medical Society, in Mandeville, La., on February 14th past. He spoke on "Urological Problems in General Practice and Suggestions for Their Solution."

Dr. W. R. Fickessen is now connected with the Kerrville Sanatorium as Medical Director and Superintendent.

The Journal is in receipt of the second issue of the "Hebrew Physician." It is contrary to the policy of the Journal to review medical journals, but we would like to comment upon the splendid appearance of this volume, which we presume, (not being able to read the script) is all that it should be in a literary and scientific point of view.

UNITED STATES CIVIL SERVICE EXAMINATION.

The U. S. Civil Service Commission announces the following open competition for nurses:

Chief and Head Nurses (Indian Service); Graduate Nurse (various services); and Graduate Nurse, Visiting Duty and Junior Grade. Information in reference to these examinations may be obtained from the Secretary of the U. S. Civil Service Board of Examiners at the Post Office or Custom House in any city.

The Parish Medical Society met in the East Louisiana State Hospital.

Papers were read by Dr. Lester J. Williams on "The Barium Enema," and Dr. E. M. Toler on "Diagnosis, Prognosis and Treatment of Pulmonary Tuberculosis."

Members present were: Drs. S. Lea, Smith, Wilkins, Miller, Cook, Lorio, Sewell, Hirsch, Morgan, Stanley, Fields, Waltrip, Williams, Fossal and Toler.

Banquet with Drs. Glen J. Smith and Staff.

The next meeting will be in East Louisiana State Hospital April 2, 7:30 P. M.

Glen J. Smith, Pres.; E. M. Toler, Secty.

NEW ORLEANS GASTRO-ENTEROLOGICAL SOCIETY.

The annual meeting of the New Orleans Gastro-Enterological Society was held at the West End Country Club on the night of Jan. 23, 1930. The orator of the occasion was Dr. John H. Musser

who presented a thoroughly instructive paper on Cruveilhier's Disease, which was discussed by many of the men present.

After the banquet the following officers were elected:

Dr. Daniel N. Silverman—President.

Dr. Foster M. Johns,—Vice-President.

Dr. Donovan C. Browne—Secretary-Treasurer.

The Eleventh United States Pharmacopoeial Convention will be held in Washington, D. C., May 13, 1930.

All eligible organizations and colleges are urged to send for credential blanks. Address Lyman F. Kebler, M. D., 1322 Park Road, N. W., Washington, D. C. Credentials should be filed by March 14, 1930.



A CAMPAIGN TO ANTICIPATE TUBERCULOSIS.

Discover the Early Signs of the Disease
In Children.

With comparatively recent studies indicating that in medicine, as in other things, "As the twig is bent so the tree inclines," the National Tuberculosis Association and its affiliated associations throughout the country will make the prevention of tuberculosis among children the keynote of its third annual Early Diagnosis Campaign, to be held during April.

The campaign, one of the many projects made possible by the sale of Christmas seals during December, 1929, will be entirely an educational effort, seeking to impress upon the public the fact

that tuberculosis usually begins in childhood. All literature issued in connection with the campaign—leaflets, pamphlets, posters, etc.—will bear a child's picture and blaze forth the message to parents: "Protect Them From Tuberculosis" together with the specific advice: "Keep them away from sick people," "Insist on plenty of rest," "Train them in health habits," "Consult the doctor regularly."

Two important diagnostic aids are commonly used by doctors to detect the presence of early tuberculosis before it makes itself known by symptoms. One is the well-known x-ray photograph and the second is the tuberculin test. The latter is a simple, harmless, painless skin test which shows whether or not there are tubercle bacilli in the body. The presence of the bacilli is indicated by a reddish tint on the skin at the point the tuberculin was applied.

Contrary to an opinion that still persists in some quarters, tuberculosis is not inherited, but is caused only by a germ called the tubercle bacillus. Although the disease often begins in early childhood it is unlike many so-called "children's diseases" in that it is lasting, or chronic. In most cases it develops so slowly as to appear to be asleep, or "latent" until the early adult years, when it ripens into activity and becomes an object of public concern. One purpose of the educational campaign is to remind people that the preventive measures should be taken during the period of latency.

Some of the common methods by which healthy persons, especially children, are infected by tuberculous persons are well known to the public but frequently are ignored. Kissing or fondling children is often a cause of infection, while drinking cups, spoons and food may have tubercle bacilli on them, unknowingly placed there by someone suffering from the disease. Persons having lung tuberculosis, especially those in the more advanced stages, cough and spit out tubercle bacilli, sometimes in large quantities, and children coming in contact with such tuberculous persons are, of course, likely to breathe in or swallow some of the germs.

A positive tuberculin test and tubercle shadows on the x-ray plate are not necessarily a cause for

alarm. They do mean, however, that the child has received quantities of tubercle bacilli from someone, and this "someone," who usually proves to be an adult in the home, must be found, for unless this close contact of the child with the tuberculous individual is broken there is grave danger that the child may develop lung tuberculosis. But whether or not the "someone" is found, the child should be under the observation of the doctor until he is fully grown.

Throughout April the many affiliated tuberculosis associations of the United States, under the leadership of the National Tuberculosis Association, will conduct an Early Diagnosis Campaign emphasizing the discovery and prevention of tuberculosis among children.

This effort is one of the activities made possible by the sale of Christmas Seals.

During the entire month of April, 1930, state, county and city tuberculosis and health associations will organize meetings where talks are to be given, motion pictures shown and pamphlets distributed, all emphasizing the importance of watching and guarding the child. The National Tuberculosis Association is preparing several million pieces of printed matter for distribution through its affiliated associations. Posters printed in brilliant colors are being prepared. A motion picture entitled "Consequences" is available. It is expected that several thousand billboards will carry the message of the campaign. A special educational film for parents and teachers is also ready.

There will also be advertisements in magazines and newspapers. The press, ever alert to popular interests, may be counted on to publish articles of information and news telling about the progress of the campaign. In short, effort will be made to bring home to every person in the United States the importance of preventing tuberculosis before it is too late, by discovering it early.

All medical, health, social, civic, religious, labor and fraternal organizations are urged to participate to this movement.

For further details concerning the campaign in Louisiana, address any local association or the Tuberculosis and Public Health Association of Louisiana, 535 St. Charles St., New Orleans, La.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

EAST MISSISSIPPI MEDICAL SOCIETY

The East Mississippi Medical Society, including the counties of Lauderdale, Neshoba, Newton, and Winston, met in regular session at the Elks' Club, Meridian, February 13. The program as furnished by the Secretary, Dr. Lowry Rush, Meridian, was as follows:

1. Prevention and Treatment of Lobar Pneumonia.—Dr. Leonard Hart. Discussion open by Drs. A. L. Majure and W. R. Holladay.

2. Differential Diagnosis of Low Back Pain.—Dr. Leslie V. Rush. Discussion opened by Drs. M. L. Flynt and T. D. Boudreaux.

3. Common Head Colds.—Dr. F. G. Riley. Discussion opened by Drs. Claud Yates and E. L. Robinson.

4. Use of Insulin and Glucose in Abdominal Surgery.—Dr. C. H. Harrison. Discussion opened by Drs. O. F. Parkes and K. T. Klein.

5. Nephritis in Children.—Dr. G. L. Arrington. Discussion opened by Drs. Z. C. Hagan and James Bennett.

The officers of the East Mississippi Medical Society this year are as follows:

President—Dr. H. S. Gully.

Vice-Presidents—From Newton County, Dr. S. A. Majure; from Neshoba County, Dr. Thomas Regan; from Winston County, Dr. O. F. Parkes; from Lauderdale County, Dr. B. L. Robinson.

Delegates to the Mississippi State Association—From Newton County, Dr. M. L. Flynt; from Neshoba County, Dr. W. J. Stribling; from Winston County, Dr. E. L. Richardson; from Lauderdale County, Dr. L. J. L. Hoyer.

Board of Censors—From Newton County, Dr. T. E. Jarvis; from Neshoba County, Dr. J. S. Hickman; from Winston County, Dr. T. F. Kilpatrick; from Lauderdale County, Dr. James Bennett.

TATE COUNTY MEDICAL SOCIETY

The following from Dr. J. Sidney Eason, Secretary:

"There has been nothing to happen in Tate of interest whatever as we have not had any meetings. Do not have a hospital in the County and only the usual sickness, and my work as part time health officer to draw news from. I wrote you some time ago giving the more important work

as health officer and since that time I have been confined in the hospital at Memphis and at home so much I haven't had time for writing. However, our officers for the Tate County Medical Society for 1930 are:

President, Dr. W. D. Smith, Senatobia; Vice-President, Dr. H. L. Murphy, Arkabutla; Secretary and Treasurer, Dr. J. Sidney Eason, Coldwater; Delegate to the State Medical Association, Dr. H. F. Byers, Senatobia.

We have sent only four patients to the Tuberculosis Sanatorium during the last six months."

THIRTEEN COUNTIES MEDICAL SOCIETY

Dr. W. C. Brewer, Columbus furnishes the following:

The March meeting of the North East Mississippi Thirteen Counties Medical Society will be held in Booneville; the July meeting at Houston and the September meeting at Corinth.

The staff of "The Mississippi Doctor," the official organ of the Northeast Mississippi Medical Society, for 1930 is as follows:

Dr. W. H. Anderson, Booneville, Editor and Manager; Associate Editors, Dr. V. B. Philpot, Houston; Dr. W. C. Brewer, Columbus; Dr. R. B. Caldwell, Baldwin; Dr. G. S. Bryan, Amory; Dr. W. A. Johns, Corinth; Dr. Carl Feemaster, Jr., Tupelo.

Drs. V. B. Philpot and W. C. Brewer, on the credentials committee from Mississippi, attended the Five States Section Meeting of the College of Surgeons in Atlanta, January 13 to 14.

"Doctors have been busy collecting money to pay taxes. Personally I hate to pay a privilege tax to give my services on many occasions to charity patients."

MISSISSIPPI STATE BOARD OF HEALTH

Dr. T. R. Beech, Ellisville, has recently been appointed health officer of Jones County.

Dr. C. E. Lahmberg, Columbus, has recently been appointed health officer of Lowndes County.

Visitors during January to Mississippi for the purpose of observing health work done were as follows:

Dr. D. L. Cannon, State Board of Health, Montgomery, Alabama; Dr. J. J. Durrett, Chief of Drug Control, Washington, D. C.; Dr. C. A. Bailey,

Representative Rockefeller Foundation, Paris, France; Dr. J. A. Kerr, Representative Rockefeller Foundation, New York, N. Y.; Dr. Charles A. Neal, Director, State Board of Health, Columbus, Ohio; Gilbert F. Dodds, Statistician, Ohio Health Department, Columbus, Ohio; Dr. O. C. Wenger, U. S. Public Health Service, Hot Springs, Arkansas; Dr. Tellaferro Clark, Senior Surgeon, U. S. Public Health Service, Consultant, Julius Rosenwald Fund, Washington, D. C.

RUSH'S INFIRMARY

The program for the Staff Meeting of Rush's Infirmary on February 7, at Meridian, was made up of a Symposium on Influenza, as follows:

1. Etiology and Pathology.—Dr. C. R. Stingily.
2. Clinical Picture and Treatment.—Dr. E. B. Key.
3. Differential Diagnosis.—Dr. I. W. Cooper.
4. Complications.—Dr. W. W. Reynolds.
5. General Discussion, led by Dr. H. S. Gully.

Dr. Julian T. Bailey is President of the Staff and Dr. H. Lowry Rush is Secretary.

SYMPATHY APPRECIATED

In January some of the regular contributors to these columns failed to contribute. The Associate Editor, in a letter to these men this month, mentioned the fact sorrowfully. It was most encouraging and cheering to receive the following:

"C'est tres triste, M. le Docteur. Permet me to sympathize. I've been through all this myself. J. S. Ullman."

MISSISSIPPI HOSPITAL ASSOCIATION

The annual assembly of the Mississippi Hospital Association was held at the Edwards Hotel, Jackson, on February 11. An interesting program occupied the entire day. Among a number of matters important to the hospitals of the State, discussed and considered was a Workmen's Compensation Bill now before the State Legislature. Rev. Wayne Allison, Superintendent of the Baptist Hospital, Jackson, is the new president of the Association. Hamilton Crawford, Hattiesburg, presided over the assembly.

SCIENTIFIC EXHIBIT

A feature of the meeting of the Mississippi State Medical Association this year is to be a scientific exhibit. All hospitals clinics, and individuals are being invited and urged to be represented. Full information may be secured from Dr. E. F. Howard, Vicksburg, chairman of the committee in charge, or from Dr. F. M. Smith, Vicksburg, secretary of the committee.

BIENNIAL REPORT OF STATE BOARD OF HEALTH

Acknowledgment is made of the receipt of a copy of the biennial report of the Mississippi State Board of Health, covering the period July 1, 1927 to June 30, 1929, through the courtesy of Dr. F. J. Underwood, Executive Officer. The report shows a really remarkable advance in health work in the State. At the present time, there are 29 counties with full-time health departments and five or six additional counties have asked for state aid to organize and maintain similar departments. An outstanding feature of development during the period of this report is the extension of local, full-time public health service to ten counties. Any member of the Association will find much worthwhile information in reading this report.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL

The monthly staff meeting was held on February 10. The following special case reports were presented:

- (1) Pancreatitis Acute, Recurrent.—Dr. A. Street.
- (2) Pancreatic Cyst.—Dr. J. A. K. Birchett, Jr.
- (3) Lung Abscess.—Dr. L. J. Clark.
- (4) Osteomyelitis of the Mandible.—Dr. H. H. Johnston.

Special Radiographic Studies were presented as follows: Pulmonary Tuberculosis; Lung Abscess; Osteomyelitis of Mandible; Fracture Dislocation of Ankle; Duodenal Ulcer (2 cases); Carcinoma of Stomach.

Visitors at the meeting were Drs. R. H. Foster, Mound, Louisiana; Joseph Green, Richton; F. M. Smith and H. H. Haralson, Vicksburg.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY

Twenty-one members attended the regular meeting of the Issaquena-Sharkey-Warren Counties Medical Society on February 11.

Dr. M. H. Bell, Vicksburg, discussed the eye and the changes taking place in it from birth to old age. Dr. Bell's interesting presentation was discussed by Drs. E. H. Jones, H. H. Haralson, and S. W. Johnston.

Dr. H. H. Johnston, Vicksburg read a fine paper on Meningococcic Meningitis. This paper was discussed by Drs. F. M. Smith, P. S. Herring, E. H. Jones, W. H. Scudder, D. A. Pettit, L. S. Lippincott. Dr. Johnston closed the discussion.

The Society discussed at length the entertainment of the next Annual Meeting of the Mississippi State Medical Association to be held at Vicksburg

on May 13, 14, and 15. A number of committees made reports on work already begun. Committees for this meeting as appointed by the President, were announced as follows:

General Chairman—Dr. S. W. Johnston, Vicksburg.

Clinics—Dr. P. S. Herring, Vicksburg; Dr. L. J. Clark, Vicksburg; Dr. W. H. Parsons, Vicksburg; Dr. T. W. Huey, Grace; Dr. V. Bonelli, Vicksburg.

Commercial Exhibits—Dr. G. P. Sanderson, Dr. D. A. Pettit, Dr. H. W. Weimar, all of Vicksburg.

Scientific Exhibits—Dr. E. F. Howard, Dr. F. M. Smith, both of Vicksburg, and Dr. M. J. Few, Rolling Fork.

Convention Halls—Dr. M. H. Bell, Vicksburg; Dr. J. B. Benton, Valley Park; Dr. W. H. Cooper, Catchings.

Hotels and Rooms—Dr. W. H. Parsons, Dr. J. A. K. Birchett, Sr., both of Vicksburg; Dr. H. S. Goodman, Cary; Dr. W. C. Seale, Catchings.

Registration—Dr. J. A. K. Birchett, Jr. and Dr. C. J. Edwards, both of Vicksburg.

Reception and Welcome—Dr. H. H. Haralson, Vicksburg; Dr. D. P. Street, Vicksburg; Dr. J. S. Ewing, Vicksburg; Dr. L. E. Martin, Anguilla; Dr. B. T. Orendorf, Rolling Fork; Dr. A. K. Barrier, Rolling Fork; Dr. E. P. Hall, Vicksburg.

Finance—Dr. I. C. Knox, Dr. B. B. Martin, Dr. A. Street, all of Vicksburg; Dr. W. G. Kiger, Eagle Bend; Dr. W. C. Pool, Cary; Dr. W. H. Scudder, Mayersville.

Entertainment—Dr. E. H. Jones, Dr. G. P. Sanderson, Dr. G. M. Street, all of Vicksburg; Dr. E. B. Stribling, Rolling Fork; Dr. G. W. Gaines, Tallulah.

Plans are being made to entertain the State Association in a manner that will be long remembered by every one in attendance.

Dr. R. H. Foster, Mound, Louisiana, was elected to honorary membership in the society.

The Society instructed the Secretary to invite the members of the Fifth District Medical Society of Louisiana to attend the meeting of the State Association as its guests.

Dr. L. J. Clark, Vicksburg, has been elected to fellowship in the American College of Physicians.

Dr. William L. Little and wife, Wesson, attended the meeting of the Southern Medical Association at Miami.

FROM OUR SECRETARY

"To the Mississippi Doctors: I wish to call your attention to the program of the Vicksburg meeting which is now in the hands of the Chairmen of Sections, and must be completed and in the office of the Secretary not later than April first.

"Let me beg of those of you who are to contribute to the program of the State Meeting that you have your essays in the hands of the Chairmen of the Section by the end of March. Also, suggest to the Chairmen the names of two members whom you would like to have open your discussion.

"The following are the Chairmen:

Medicine—G. Y. Gillespie, Jr., Greenwood.

Surgery—H. R. Shands, Jackson.

Hygiene and Public Health—H. R. Hays, Jackson.

Eye, Ear, Nose and Throat—C. A. McWilliams, Gulfport.

Radiology—C. C. Hightower, Hattiesburg.

Respectfully yours,

T. M. DYE, Secretary."

NORTH MISSISSIPPI SIX COUNTY MEDICAL SOCIETY

A meeting of the North Mississippi Six County Medical Society was held at Holly Springs, January 22. Dr. A. H. Little, Oxford, Secretary of the Society, writes, "Even though we rode through a snow storm with the temperature barely above zero, every man on the program was present and we had a good meeting."

Following is the program:

1. Cholecystitis—Dr. R. L. Sanders, Memphis. Discussion opened by Dr. J. C. Culley.

2. A Newer Conception of the Action of Digitalis—Dr. P. W. Rowland, Oxford. Discussion opened by Dr. C. M. Speck.

3. Diseases of the Thyroid Gland—Dr. William C. Chaney, Memphis. Discussion opened by Dr. G. H. Wood.

4. Symptomatology and Treatment of Perforated Gastric Ulcers—Dr. R. D. Kirk, Jr., Tupelo. Discussion opened by Dr. George Brown.

5. Clinical Problems Seen in Children. (Lantern Slide Demonstration)—Dr. Ralph Bowen, Memphis. Discussion opened by Dr. H. R. Elliott.

Officers for 1930 were elected as follows: President, Dr. P. W. Rowland, Oxford; Vice-Presidents, Dr. H. P. Boswell, New Albany, Dr. R. G. Grant,

Holly Springs, Dr. G. A. Brown, Water Valley, Dr. F. E. Linder, Oxford; Secretary, Dr. A. H. Little, Oxford.

Dr. A. H. Little, Oxford, furnishes the following notes:

Dr. F. E. Linder, formerly of Memphis, is now located at Oxford doing general practice.

Dr. S. T. Lyles, formerly of Tula, is now located at Oxford doing general practice.

Dr. B. S. Guyton, Oxford, will soon open his new Eye, Ear, Nose and Throat clinic near the Oxford Hospital.

SOME HIGH LIGHTS IN MISSISSIPPI MEDICAL HISTORY (Facts gathered from a History of the Mississippi State Medical Association, published in 1910).

The Aberdeen meeting in 1879 must have been an occasion of sorrow for those who attended. Some twenty members nearly ten per cent. of the total membership, had fallen in the great yellow fever epidemic of 1878 and the first day of the meeting of the Association was set apart for memorial exercises. Music for the occasion was furnished by the Aberdeen Harmony Club, there was a prayer by Bishop Paine, a lesson read from the Scripture by Rev. V. W. Shields, a memorial address by Rev. B. M. Palmer, of New Orleans, memorial poems by Dr. J. Dickson Bruns, of New Or-

leans and Major S. A. Jonas, of Aberdeen, a memorial oration by Dr. John Brownrigg, of Columbus, the report of the committee on necrology by Dr. A. G. Smythe, of Baldwyn and special tributes to diseased members by various of their fellows, the exercises concluding with benediction by Rev. John H. Scruggs.

The Congress of the United States was invoked in behalf of a more efficient quarantine system and an application was made to the Legislature of the state for an Act incorporating the Association.

Dr. Charles T. Chamberlain, Natchez, attended the sectional meeting of the American College of Surgeons at Atlanta in January.

ANDERSON INFIRMARY.

The regular monthly staff meeting of the Anderson Infirmary, Meridian, was held on February 14. The following special case reports and papers were presented:

1. Toxin-antitoxin. Dr. Googe.
2. Perforated Gastric Ulcer. Dr. Anderson.
3. Broncho-Pneumonia. Dr. Arrington.
4. Fractured Skull. Dr. Anderson.
5. Toxemia of Pregnancy. Dr. Cleveland.

Dr. Anderson made a report of the recent meeting of the Mississippi Hospital Association at Jackson.

Dr. H. F. Tatum is president of the staff.

POLIOMYELITIS—Riley makes a plea to the medical profession in general and to health officials in particular for the early diagnosis, hospitalization, early serum treatment, and after-care of poliomyelitis. Diagnosis before paralysis is important. When a patient, especially a child, appears prostrated out of proportion to the temperature, with flushed face, an anxious expression, mild injection of the throat, rapid pulse, a coarse tremor or movement, the head tilted on the neck, stiffness of the spine and pain on anterior flexion, and an increase in the cellular and globulin contents of the spinal fluid, a diagnosis of poliomyelitis should be made and convalescent serum administered. No untoward results from the use of convalescent serum need be feared, and if there is an error in diagnosis it should be on the side of safety. Early and repeated spinal drainage and the use of convalescent serum are most important in the preparalytic stage of the disease. When it is realized that the pathologic changes of this disease are located in the central nervous system, it is obvious that, to insure the minimum of paralysis and to obtain the greatest

functional activity of the part, prolonged rest in the recumbent position is essential. The number of patients with poliomyelitis recovering without appreciable paralysis during 1928 epidemic in Maryland and in late epidemics elsewhere is most gratifying and encouraging. The treatment of this disease under proper conditions, and in the hands of competent persons, reveals that between 70 and 80 per cent of the cases show good recovery as compared with 20 per cent receiving less intensive treatment. Finally, it may be stated that, under appropriate treatment, 90 per cent of the deformities which have followed in the wake of past epidemics may now be eliminated, and deformities as an after-result of this disease should entirely disappear. Riley stresses the fact that early treatment in this disease of all diseases is an absolute necessity. With the use of human serum, early hospitalization and the services of an orthopedic surgeon during the whole course of the disease, a low mortality rate, a very low average of total paralysis, a striking reduction in paralysis of the severe grade and complete prevention of deformities are to be expected.—J. A. M. A., 94:550, 1930.

BOOK REVIEWS

The Nutrition of Healthy and Sick Infants and Children: By E. Nobel, C. Pirquet, and R. Wagner. 2d rev. ed. Translation by Benjamin M. Gasul, B. S., M. D. Philadelphia, F. A. Davis Company. 1929. pp. 243.

In order to utilize to a maximum degree the available food supply for infants and young children in the central powers, during the World War the late Clemens von Pirquet introduced a new unit of nutrition which he believed had advantages over the calorie. To this unit he gave the name "nem" (Nutrition—Equivalent—Milk). He considered that the substance which furnishes a theoretical basis for the unit of fuel value is human milk, the oxidation of one gram of which results in an energy production of 0.67 calories. The relation, therefore, between "nem" and calorie is 2 to 3. This book, which is a translation of the German book, outlines the practical application of Professor Pirquet's nem system of feeding.

In addition there is a clinical consideration of nutritional disturbances in infants and young children. The classification of these disturbances follow very closely those of Finklestein and Czerny and Kellar in that they consider that most of these intestinal conditions are based on errors in nutrition and respond to rational dietary management. The nutrition of the normal infant and child is fully discussed in the first part of the book. Then the management of the sick infant and child is taken up. Complete graphic charts which follow the conventional schematic style prevailing in most of the clinics and hospitals of Germany and Austria, constitute many of the illustrations. In addition there are many photographs which amplify the text. Towards the end of the book certain disease conditions closely allied to nutrition are discussed.

The entire work presents the personal experiences of the authors at the University Children's Hospital in Vienna and outlines in a very comprehensive way the management of nutritional diseases with the typical thoroughness which is characteristic of German clinicians.

Many American pediatricists continue to regard their nutritional disturbances in infants in terms of the German classifications although considerable change of opinion has taken place in the past ten years. It is believed that this book will be well received for the reason that it offers a means to those, who are unfamiliar with

the German point of view concerning the feeding of infants and the management of gastrointestinal disturbances, to broaden their knowledge.

ROBERT A. STRONG, M. D.

Principles of Clinical Pathology in Practice: By Geoffrey Bourne, M. D. (Lond.), M. R. C. P., and Kenneth Stone, M. D. (Oxon.), M. R. C. P. Lond., Oxford Univ. Press. 1929. pp. 392.

This compact little volume is unique in its subject matter and in the manner in which the latter is handled. The authors have attempted very successfully to cover the whole field of laboratory diagnosis and interpretation in a general way. Little or no detailed technic is given, but adequate mention is made of the procedures to be taken, and the meaning thereof in most of the important disease conditions one meets with. The book is divided under headings of the disease and of the different organ systems. The physician is told what laboratory examinations to have made, what results to expect and what value to attach to them. This volume should be of considerable service to those clinicians who do little or none of their own laboratory work but who wish to keep abreast of laboratory procedure.

S. J. LEWIS, M. D.

The Blood Picture and Its Clinical Significance (Including Tropical Diseases): A Guidebook on the Microscopy of Blood: By Prof. Dr. Victor Schilling. Tr. and ed. by R. B. Gradwohl, M. D. 7th and 8th ed. rev. St. Louis, C. V. Mobsy. 1929. pp. 408.

This volume is an excellent translation of Prof. Schilling's work (7th and 8th ed.), by Dr. Gradwohl. The book is divided into four parts,—Technic, Theory, Morphology and Discussion of the Blood Picture, Fundamental Principles for clinical use of the blood picture. Selected examples for practical use of hemograms are given. The author lays greatest emphasis on his hemograms and their interpretation, these constituting the *raison d'être* of the book.

There has been a long controversy between Schilling and Arneith as to the meaning of the qualitative and quantitative changes in the leucocytes of the blood in various disease conditions. This volume, besides being a work on blood per se, is an attempted refutation of the several

volumes of Arneth. The main point of interest to the author is the change in neutrophiles.

Schilling classifies neutrophiles into myeloblasts, promyelocytes, myelocytes, juvenile cells, stab cells and segmented cells,—as against Arneth's classification with its five main divisions, each having 18 to 24 subdivisions. In brief, Schilling professes to see a great number and variety of quantitative and mainly qualitative changes in the granulocytes and non-granulocytes of the blood. He speaks of "shifts" to the left and right, as does Arneth; also, "degenerative" and "regenerative" types of cells of different stages of maturity. The attempt is made to diagnose and prognose disease processes on these minute structural changes. It is perfectly true that one can distinguish one type of tissue reaction from another very often, a good example being a benign versus a malignant cell or growth. Also, every microscopist has noted certain qualitative cellular changes in various conditions, *e. g.*, the monocyte-lymphocyte ratio and nuclear shift in tuberculosis, or the types of neutrophils seen in lobar pneumonia or any acute severe process; but few of us have applied or will apply ourselves so closely to cellular changes as Prof. Schilling has done. Even Prof. Schilling must have a very difficult task to diagnose diseases from blood smears alone when the diagnosis depends on "nuclear shifts," etc. At the same time most microscopists do or will employ in the future, consciously or subconsciously some simplified Schilling index method to denote qualitative leukocyte changes.

This work by Prof. Schilling, together with the works of Sabin, Soames and Cunningham, in the field of supra-vital staining, is certain to be a vast stimulus toward more exact and informative blood examinations.

S. J. LEWIS, M. D.

Practical Materia Medica: By Clayton S. Smith, Ph. D., M. D., and Helen L. Wikoff, Ph. D. Philadelphia, Lea & Febiger. 1929. pp. 300.

A real well-worth-while presentation of a subject, the teaching of which there may be some grounds for argument. It has always seemed to the reviewer better pedagogically to teach the student thoroughly a few drugs than to attempt to acquaint him with several hundred. Be that as it may, if the latter method of teaching is considered the best, then this relatively small book will be of extreme value in instructing the prospective doctor.

J. H. MUSSER, M. D.

Annual Report of the Rockefeller Foundation for 1928: New York, The Rockefeller Foundation. pp. 460.

A survey of the tremendous amount of work done by the Rockefeller Foundation in the past year. There are probably very few physicians who have even the suggestion of an idea as to how extensive, how far reaching and how broad are the ramifications of the work of this magnificent and active organization. A glance through this annual report will be most elucidating and instructive.

J. H. MUSSER, M. D.

International Clinics: Vol. III, 39th Series, September, 1929. Lippincott Co. pp. 302.

This volume of the International Clinics is excellent, contained interesting and practical articles by prominent national and international authors. Of particular interest to the internist are the articles on Spastic Colon and Treatment of Anemia.

WILLARD R. WIRTH, M. D.

Le cardiogramme de decubitus lateral gauche en clinique: By V. Pachon and Roger Fabre. Paris, Gaston Donn et Cie. 1929. pp. 87.

The authors prove that Professor Pachon has demonstrated the absolute homology between the normal cardiogram of the left lateral decubitus and the physiologic tracings of intracardiac pressure. They describe each of the different phases of the cardiac revolution, from the first incident of auricular contraction up to the bed of the cardiogram with its undulating and slightly obliquely descending direction as far as the beginning of ventricular diastole and down to the lowest point of the cardiogram which point corresponds to the opening of the auriculo-ventricular valves. Then follows the slightly ascending tracing of the general diastole of the heart to the starting point completing the cycle.

All the different incidents of the cardiogram are considered singly: the auricular systole; the intersystole; the beginning of ventricular tension and opening the segmoids; the bed of the cardiogram, the height and direction of which indicate the sustained effort of ventricular expulsion; ventricular decontraction and closure of the segmoids; opening of the auriculo-ventricular valves; the general diastole of the heart; and the anomalies engaging each of these incidents are the object of analytic and etiologic study.

HENRY BAYON, M. D.

Principles and Practice of Minor Surgery: By Edward Milton Foote, A. M., M. D., and Edward Meakin Livingston, B. Sc., M. D. New York, D. Appleton & Co. 1929. pp. 787.

The present edition presents the subject under three heads—namely, surgical technic, principles of diagnosis and treatment, and localized surgical treatment. The first two parts, being entirely new, give the modern conception of disease as well as the corresponding and standard technic of treatment. The chapters dealing with the surgical affections of the various parts of the body also have been entirely revised, thereby, bringing to the reader new suggestions in diagnosis and treatment.

The entire book is profusely illustrated with unusually good engravings made chiefly from photographs and original drawings, showing actually what is, rather than what might be as medical illustrations often do.

The text is also systematic, logical and to the point, many lengthy and unnecessary details having been condensed to a few paragraphs.

This volume, even more than its many previous editions, should continue to be useful both as a text for students and as a reference book for the general practitioner and the younger surgeons.

PAUL G. LACROIX, M. D.

Diagnostic Methods and Interpretations in Internal Medicine: By Samuel A. Lowenberg, M. D., F. A. C. P. Philadelphia, F. A. Davis Co. 1929. pp. 1032.

This is a good, handy reference volume devoted to diagnostic methods and interpretations in medical diagnosis. The normal findings with pathological variations are noted. Special chapters are devoted to laboratory findings, the electrocardiograph, the radiograph and special examinations dealing with life insurance, periodic health examinations and malingering. It is a worthwhile addition to a medical library.

I. L. ROBBINS, M. D.

Textbook of Clinical Neurology: For Students and Practitioners: By M. Neustaedter, M. D., Ph. D.; with an Introduction by Edward D. Fisher, M. D. Philadelphia, F. A. Davis Co. 1929. pp. 602.

A comprehensive volume, well written by one well known in the fields of neuropsychiatry; easily readable with illustrations, clear cut and readily interpreted. The unique feature, though an essential one, of this volume is that the author has grouped in paragraphs, rather than chapters, the necessary abstracted material that the busy doctor

requires when referring to reading that is collateral. The abstracts are concrete in composition and conclusions. His method of approach to examinations is just what the alert practitioner is in need of.

The part dealing with functional neuroses, while not elaborately and flamboyantly portrayed as has been done by other authors, is nevertheless placed before us in a manner which at a glance one can gather the information desired. Perforce, this should be so as this book deals in its entirety with neurological data.

A foreword by Edward Fisher, M. D., is a compliment to the author. This volume is the *tolé et lege* type of book companion to those interested in this special subject and likewise should be an aid to the general practitioner.

WALTER J. OTIS, M. D.

The Physiology of Love: By George M. Katsainos, Ph. D., M. D. Boston, Privately printed. 1929. pp. 326.

This treatise has nothing in particular to justify its being in existence. Keeping in mind that there is a little good in anything bad, one will be charitable. The author is an authority on his subject, as he takes no little trouble to emphasize in his book.

I. L. ROBBINS, M. D.

Varicose Veins: By H. O. McPheeters, M. D., F. A. C. S. Philadelphia, F. A. Davis Co. 1929. pp. 208.

An excellent book devoted to every phrase of varicose veins.

Every detail concerning the indications and the treatment of this condition is well presented. Any person doing this type of work is urged to read this book. Likewise we urge the reading by individuals who entertain any "doubts" as to the rational of this treatment.

The author has had an extensive experience and presents it in such a form as to make it easy reading.

SHIRLEY C. LYONS, M. D.

The Cytoarchitectonics of the Human Cerebral Cortex: By Constantin von Economo. Translated from the German by Dr. S. Parker. London, Oxford University Press. 1929. pp. xii+186, 61 figures.

This work provides a survey of the histological organization of the cerebral cortex, each region being systematically described and mapped with respect to the brain surface, as well as illustrated by excellent photographs and drawings. As is

well known, the three distinctive varieties of cortical neurones (pyramidal, granule and fusiform cells) have their cell bodies arranged in horizontal layers within the cortex. The six layers thus defined present regional variations, and on the basis of these variations von Economo defines five general types of cortical organization. Variations within the provinces of the five types allow the further differentiation of over one hundred histologically distinct areas. Structure is correlated with function insofar as possible, and the usefulness of such data in relation to disturbed cortical function is emphasized.

The author published in 1925 an extensive treatise on the subject; while the present small volume does not exhaust the details of this complex field, it makes available in English a reference superseding the similar studies by Broadmann (1909) and by Campbell (1905).

HAROLD CUMMINS, Ph. D.

Synopsis of the Practice of Preventive Medicine as Applied in the Basic Medical Science and Clinical Instruction at the Harvard Medical School: Cambridge, Harvard Univ. Press. 1929. pp. 194.

It has been a genuine pleasure to read this book, true to its title, with every chapter giving practical discussions as brief as consistent. In its condensed form it is unsurpassed for excellence and convenience.

This book should appeal strongly to the students of medicine, the general practitioner and the public health worker.

OSCAR DOWLING, M. D.

Ker's Infectious Diseases: Revised by Claude Rundel, O. B. E., M. D. (Lond.), M. R. C. S. (Eng.), L. R. C. P. (Lond.), D. P. H. 3rd Ed. London, Oxford University Press. pp. 594.

The original volume by Ker was written to be used as a text-book and was published at a time when the physician had to rely more completely on the physical findings in a given disease than at present. The author gave intricate descriptions of the acute exanthemata as he had observed them in his very wide experience. For the present edition Kundel, with little changes in the general description, has attempted to bring bacteriology, immunology, and treatment up-to-date.

The evaluation of the author of the newer methods of treatment are indicated by the following expressions of opinion: Very favorable comment is made on the use of scarlet fever serum as a curative measure though it is not recommended to be used in the late septic complications. The production of both active and passive immunity is

considered and the accepted methods given. It is pointed out that measles is one of the most serious of childhood diseases, not because of its immediate mortality, but due to the complications, and isolation has not met with the same success in this disease as in other analogous diseases. This is attributed to its great infectivity prior to the time when the disease can be easily diagnosed. The use of convalescent serum in 5 to 10 cc. doses, producing an immunity of from three to four weeks' duration, is considered of value in time of epidemic. No value is attached to the use of anti-streptococcus serum in erysipelas, on the contrary it is believed to make the general symptoms worse in some instances. It is interesting to note that the author places little value in the time honored custom of disinfection of the sick room following an infectious disease. A review of the customary methods employed is given but practically none are recommended.

As a reference book the publication has considerable value, but to read it entirely would be a burdensome task. Its length is accounted for by its completeness.

J. C. BARTON, M. D.

Supplement to the George Blumer Edition of Billings-Forchheimer's Therapeutics of Internal Diseases. New York, D. Appleton & Co. 1929. pp. 760.

A most interesting volume and one that brings the subject up-to-date in a most satisfactory manner by authors well established in their particular fields. A welcome addition to this system of therapeutics.

I. L. ROBBINS, M. D.

Edema and Its Treatment: By Herman Elwyn, M. D. New York, The Macmillan Co. 1929. pp. 160.

This book does not represent original experimental work by the author but rather a lengthy review of the publications of others with the formation of his own ideas as to their meaning. In it there are 193 references to the literature. That some of the experimental work apparently results in conflicting conclusions is granted by Elwyn, who has accepted only that most accurately done.

The author shows that most observers have proven that the blood volume remains within normal limits in all conditions with edema and concludes that edema is due entirely to a slowing up of the movement of fluid from the tissues to the blood stream. The factors involved in water movement are the water depots, capillaries, kidneys and a regulating center in the interbrain. The latter is only partially proven to exist. It

is assumed that the constellation of electrolytes in the tissues or depots determines the amount of water they contain and this constellation is changing with any alteration in function of any other of the three factors. That is the usual attempts to explain edema formation on a purely physical and chemical basis are failures is his belief and he attempts to prove it is a vegetative function with its center of control in the phylogenetically oldest part of the interbrain.

Under treatment of edema, it is considered as to origin, whether cardiac, renal, that of disturbed metabolism or unknown cause. The judicious limitation of fluids is stressed as is the use of drugs in selected cases. The drugs considered are those of the purine group, mercury compounds and acid forming salts. In each case an attempt is made to explain this mode of action with a scientific explanation for it.

Though a part of the book entails a greater knowledge of chemistry for its comprehension than the average reader may have at his command, the majority of it is decidedly enlightening. Undoubtedly it represents a thoughtful contribution to our conception of the nature of edema regardless of the system at fault.

J. C. BARTON, M. D.

The Right Honorable Sir Thomas Clifford Allbutt: A Memoir. By Sir Humphry Davy Rolleston, Bart. G. C. V. O., K. C. B. London, Mac-Millan & Co., Ltd. pp. 314.

It is particularly appropriate that the present Regius Professor of Physic of the University of Cambridge, Sir Humphry Rolleston, should have written the life of his predecessor, Sir Thomas Clifford Allbutt, who had held the chair for thirty-two years. Sir Humphry has handled his subject with a delicacy of touch and with a charm which makes the work one a very great pleasure to read. He has been handicapped somewhat by failure to secure letters, writings and other biographical memoranda of the early life of Sir Clifford. This is not, however, a real misfortune as it is in the later years of life that the thoughts and ideas of early life come to full bloom; it is, needless to state, truly the most important part of a man's life unless senile decay has set in, which it did not in the case of Allbutt.

Sir Clifford was a great man, a great physician, a scholar and observer, a humanist, and a beloved and attractive gentleman. He, early in his life by his conscientious studies of disease, had made contributions to medical science which have been overlooked by present day writers. Even such an important observation as the value of a hypodermic injection of morphin for the relief of the dyspnea of heart disease, was made by Allbutt in his early years of life, and yet this fact is

known by few of us of the present generation. Probably the greatest contribution that Sir Allbutt made to medicine was his outstanding work on diseases of the arteries, including angina pectoris. His theory of the mechanism of the production of angina pectoris is still considered logical. His important conclusions that high blood pressure antedates and precedes arterial diseases, are to this day, although advocated some thirty-five years ago, adequately maintained by experimental work. It was largely through Sir Clifford that the estimation of arterial blood pressure has become a routine procedure. One of the particularly interesting features of the life of Allbutt lies in the interest that he always took in the scholarly presentation of medical subjects. He fought vigorously and actively against the use of slovenly language in medical writings. Punctilious in his duties, fastidious in his dress, so was he always precise to the last degree in his use of English language in his medical writings.

The 89 years of the life of this distinguished physician were broad in their diversity of interests and spacious in their outlook on life. They were years which were always energetically passed and teemed with physical and cerebral activities because he abhorred laziness. It is impossible to touch in a short review such as this upon the broadmindedness of the man and the catholicity of his interests. A friend of all men and loved by all, it was a happy ending to a splendid life to have passed away quickly and promptly, so rapidly in fact that his professional adviser did not have time to reach him, when taken ill one night, before death ensued.

Sir Humphry is to be congratulated upon this splendid biography written, as we in America have come to expect the English physician to write, with discrimination, taste and beautifully molded English. The pleasure of reading about Allbutt, anticipated upon opening the volume, was more than realized as result of the scholarly efforts of the author.

J. H. MUSSER, M. D.

Surgical and Medical Gynecologic Technic. By Thomas H. Cherry, M. D., F. A. C. S. Philadelphia, F. A. Davis Co. 1929. pp. 678.

This is a practical text of operative gynecologic technic, from the simplest to the most complicated operations, very clearly illustrated and described with great simplicity. Though the text is intended for what the title means it to be, the author gives valuable hints as to indications and diagnosis. Several chapters devoted to anesthesia and anesthetic methods, as well as the various physical methods of therapy, will be a great help to practitioners, for quick reference.

ADOLPH JACOBS, M. D.

Stone in the Urinary Tract: By H. P. Winsbury White, M. B., Ch. B. (Edin.), F. R. C. S. (Edin.), F. R. C. S. (Eng.). Philadelphia, P. Blakiston's Sons & Co. 1929. pp. 344.

The recently published volume entitled "Stone in the Urinary Tract," by H. P. Winsbury White, of England, is in my opinion, if not the best, certainly one of the best books written on the subject in many years.

The problem of urinary calculus has been thoroughly considered from every possible angle and has been so put into words that it is both instructive and interesting reading. Fortunately there are just enough statistics incorporated in it to put over the point at hand without becoming boring and tiresome. Furthermore the subject is so written as to be equally valuable to the general practitioner of medicine as well as the urological surgeon, to the later of whom I consider it to be almost indispensable.

W. A. REED, M. D.

Interns Handbook: By Members of the Faculty of the College of Medicine Syracuse University. Philadelphia, J. B. Lippincott Co. 1929. pp. 254.

A handy book, but hardly of such great worth or value as to require a list of authors totaling close to sixty persons. It contains a smattering of information that may be of interest to any one engaged in a general internship.

I. L. ROBBINS, M. D.

Coronary Thrombosis: Its Various Clinical Features: By Samuel A. Levine. Baltimore, Williams & Wilkins Co. 1929. pp. 178.

An excellent monograph that rather exhaustively covers a most important subject. An interesting feature is the last division of the book, giving a summary of 145 case reports. There is an excellent list of references to the literature. The author is an authority who presents his subject in a most interesting manner and merits the attention of both internist and surgeon.

I. L. ROBBINS, M. D.

Pathology of the Eye: By Jonas S. Friedenwald, A. M., M. D., F. A. C. S. New York, The Macmillan Co. 1929. pp. 346.

American ophthalmology is indebted to the author for its first book on this subject. The practicability, readability, numerous and excellent illustrations, and moderate price commend it highly. The prohibitive prices charged by German publishers for similar works should be an incentive for its introduction in foreign countries.

Being essentially written for the beginner in ophthalmology, the author has apparently intentionally presented the subject in a rather orthodox manner. More recent conceptions, such as the multiple causation of phlyctenular and herpetiform corneal affections are omitted, as is any mention of the life cycle of the ocular cells and the toxicity of the ocular fluids on which most diseases of the eye must really depend.

Rather surprising is the author's apparent unwillingness to acknowledge that toxic substances, without bacteria, can produce inflammation, especially in the uveal tract. It is true that the specific chemicals involved have not been definitely isolated but neither have many others on which our misunderstanding of pathology and treatment almost solely depends.

The work of numerous investigators, including Irons and Brown, should convince the most skeptical that the recurrence of non-specific uveal disease is best prevented by the eradication of the causative toxic focus. This causative factor must be either a physical or chemical agent, assuming that the cells of the tissue involved have a normal life cycle.

Like most first editions, this volume contains certain phrases which will doubtless be rearranged in subsequent editions.

The material is well arranged, the index comprehensive and the illustrations are worthy of especial mention.

Anyone who loves ophthalmology will make no mistake in reading this volume.

CHAS. A. BAHN, M. D.

The Principles of Electrotherapy and Their Practical Application: By W. J. Turrell, D. M. R. & E. (Cantab.), M. A., D. M., B. Ch. (Oxon.). Second edition. London, Oxford Univ. Press. 1929. pp. 413.

In the first chapter the author goes far back into the history of this subject. The people bordering the Mediterranean used the torpedo fish which was really capable of producing electrical shocks, and was utilized medically. In 300 B. C. electricity was produced by friction upon precious stones. A marked advance was made when the Leyden jar was discovered in 1745. Pains and paralysis were the main indications for treatments, at this time. Kratzenstein advanced this subject greatly, and was called the Father of Electrotherapy. In England the clerical professions were the early electrotherapists, and all forms of diseases were treated. The prominent names of the early therapists were Galvani, Volta, Dr. Bird, Farrady, Duchene, etc.

Chapters on actions of electrical currents are very good, and include constant current, low and high frequency, diathermia, both surgical and medical, and static electricity.

Chapters on radiant energy consider heat and light, ultra violet, and roentgen-rays. A most instructive chapter on electrical shocks is given.

The book is a very good one in which careful attention is given to details of treatments. Any practicing physician and specialist will be well repaid for the use of this book for both reference and study.

L. A. FORTIER, M. D.

Annals of Roentgenology—The Neck: By Percy D. Hay, Jr., M. D., with an Introduction by Henry Pancoast, M. D. Illus. New York, Paul B. Hoeber, Inc. 1930. pp. 104.

Dr. Hay's book will be found of great interest by the roentgenologist, orthopedic surgeon and students. The author has wisely elaborated on the normal neck. This is very important, as the normal often varies within itself. In addition to the description of the normal appearance of the structures of the neck, are beautiful illustrations. The abnormal neck is next presented and every possible condition in which the roentgen-ray can be of use is discussed in full. Various positions are mentioned and described that will facilitate the roentgen-ray examination of the neck. Many clear and interesting illustrations are found in discussing the pathology of this region. The book contains 66 illustrations, four chapters, a bibliography and a most interesting introduction.

LEON J. MENVILLE, M. D.

The Practical Medicine Series: General Medicine: Series 1929. Ed. by G. H. Weaver and others. Chic. Yr. Bk. Pub. 1929. pp. 829.

The 1929 General Medicine Series is quite up to the mark of its predecessors. In this volume will be found abstracts of the best papers on infectious diseases, diseases of the chest, diseases of the blood, and blood making organs, diseases of the heart and blood vessels, diseases of the gastrointestinal tract and finally, diseases of metabolism. In this volume the same good judgment will be noted in the selection of certain valuable papers for lengthy abstraction. The interpolation of notes and addenda by the collaborators gives additional interest to the subject matter. The volume can be highly recommended to the practitioner who wishes to keep abreast of the medical literature at reasonable cost.

RANDOLPH LYONS, M. D.

Hemorrhoids: The Injection Treatment and Pruritus Ani: By Lawrence Goldbacher; M. D. Philadelphia, F. A. Davis Company. 1930. pp. 205.

The outstanding feature of the book is the advocacy of the injection of 5 per cent phenol in oil for the cure of hemorrhoids and certain types of pruritus ani. Remarkably large doses are used at an injection—8 or 10 cc. at a single site. It is hard to realize the results could be as wonderful as reported. The author states that he has never seen any untoward results from these injections.

The book is neatly arranged and has many good illustrations, but the method of treatment recommended and the claim of such uniformly good results seem rather bold.

MAURICE LESCALE, M. D.

PUBLICATIONS RECEIVED

F. A. Davis Company, Philadelphia: *Tonsil Surgery*, by Robert H. Fowler, M. D. *Practical Psychology and Psychiatry*, by C. B. Burr, M. D.

The MacMillan Company, New York: *Disease and the Man*, by George Draper, M. D.

Oxford University Press, New York and London: *Surgery of the Lung and Pleura*, by H. Morrison Davies, M. A., M. D.

Charles C. Thomas, Springfield, Illinois and Baltimore: *Diseases Transmitted from Animals to Man*, by Thomas G. Hull.

The Year Book Publishers, Chicago: *Practical Medicine Series, General Surgery*, edited by Evarts A. Graham, A. B., M. D.

E. B. Saunders Company, Philadelphia and London: *A Text-book on Orthopedic Surgery*, by Willis C. Campbell, M. D., F. A. C. S. *Treatment in General Practice*, by Harry Beekman, M. D.

C. V. Mosby Company, St. Louis: *Getting Well and Staying Well*, by John Potts, M. D. *Symptoms of Visceral Disease*, by Francis Marion Pottenger, A. M., M. D., LL.D., F. A. C. P.

D. Appleton and Company, New York and London: *Psychology*, by James Winfred Bridges, Ph. D.

G. P. Putnam's Son, New York: *Gynecology for Nurses and Gynecological Nursing*, by Comyns Berkeley, M. A., M. D. *Lectures upon the Nursing of Infectious Diseases*, by F. J. Woollacott, M. A., M. D., B. Ch. Oxon, D. P. H. *A Textbook of Orthopedic Nursing*, by Evelyn C. Pearce.

Lea & Febiger, Philadelphia: *Roentgenographic Technique*, by Darmon Artelle Rhinehart, A. M., M. D. *The Essentials of Histology*, by Sir Edward Sharpey Schafer, F. R. S. *Hypertension and Nephritis*, by Arthur M. Fishberg, M. D.

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FACTORS THAT RELATE THEMSELVES TO SUCCESSFUL SURGERY.*

W. W. CRAWFORD, M. D.,

HATTIESBURG, MISS.

If we define surgery as that branch of medical science that relates itself to the removal of Nature's handicaps, it then becomes obvious that all surgery to be effective must correctly interpret the patient's pathology, and in its broadest acceptance contemplate a cured patient. That surgery has not always been made to conform to the above standard is not due so much to a lack of response to the individual operation. When surgery disappoints, and it often does, it is frequently because the surgeon loses sight of the fact that man is an intricate piece of machinery that may have many of its parts defective at the same time. Repair of the individual part is necessary, but unless all the deficiencies are corrected the machine cannot be expected to approach the maximum of efficiency. It is of prime importance that a careful survey be made in every case, when possible, before any program, either medical or surgical, is adopted. Such an examination often develops facts that make it necessary to transfer a case, that on superficial examination is apparently surgical, to the medical group, or vice versa.

It is therefore apparent that to qualify as a good surgeon one must also be a good

internist. We occasionally hear surgeons boast of their ignorance of internal medicine; but I believe you will agree with me that the man whose prowess is confined to surgical technic may be a good mechanic but is not a safe surgeon.

The mere fact that an examination reveals surgical pathology does not always make operative interference imperative. If the patient's expectancy is low, if there is a narrow margin of resistance, from whatsoever cause, or, finally, if the correction of the individual defect cannot be expected to restore the patient to normalcy, then the surgeon should at least acquaint the patient or his family with all of the facts before considering an operation.

Dr. John B. Murphy once assured the speaker that a surgeon should never lose a patient as the result of an operation. It was his opinion that if a comprehensive study of the patient's problem was made and proper refinement of judgment was exercised with reference to the patient's resistance, only those cases that should recover would be subjected to surgery. While we know, of course, that such an ideal is utopian, it is at least an end toward which we should strive.

Dr. Maurice H. Richardson, whose candor and conservatism were an inspiration to all who knew him, was emphatically opposed to operating on moribund patients.

It is argued by some that if a patient will probably die without an operation the surgeon is warranted in resorting to the knife. This attitude is only tenable when

*Chairman's Address, read before the Section on Surgery, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

there is an estimated reserve that will be adequate after subtracting the loss incident to anesthetic and trauma.

I am reminded of a member of our profession, age seventy-two, who in early years had two or three abdominal operations, as a result of which he has numerous adhesions and occasionally symptoms of obstruction. It is possible that some day the obstruction will become complete and he will lose his life. On the other hand, an operation, under the most favorable conditions, would be too hazardous to enthuse the most intrepid surgeon. I have therefore advised my old friend to make his final exit over the medical route.

A woman beyond sixty years was admitted in the South Mississippi Infirmary last week with evidence of complete common duct obstruction. The antecedent history, plus a careful survey of the case at present, warranted a diagnosis of malignancy involving gall-bladder primarily and extending to liver and ducts. As a matter of scientific interest we felt disposed to do an exploratory operation, and as a young surgeon we followed that plan with the fatuous belief that we might per chance palliate the condition. Today we know that such a procedure would only add to the discomfort and in many instances hasten the fatal issue.

The above two cases are illustrative of a large group that confront a busy surgeon during a period of years and lend emphasis to the importance of thoroughness and conservatism. As a result of more thorough diagnostic study we find that many of our patients have a multiplicity of pathology. This may prompt us to embark on a corrective program that is too ambitious. Again the measure of the patient's resistance should be the determining factor. When in doubt the chances are always in favor of a conservative program.

Whether due to the stress and tension of our twentieth century civilization or to other causes, there is a greatly augmented

group of psychics presenting themselves to the clinics for treatment. Given two patients with equal pathology: One moves placidly along. She experiences some discomfort of course from her disability, but her relationship to home and society is not upset. The other patient becomes the victim of a multiplicity of nervous reactions that disqualify her for the performance of any of the exacting requirements of life. In the one corrective surgery restores normal balance, while the other, if improved at all, finds no permanent advantage flowing from the operation. If, per chance, she no longer complains of pain in the operative field, she develops a new symptom complex more dramatic than that which obtained prior to her operation. Years pass, other surgeons attack her problem, and finally she becomes a confirmed neurasthenic. But, as she haunts the office of doctor after doctor, she insists that all her trouble dates to her last operation.

I venture the assertion that every surgeon of experience has had patients who belong to this group. They often come with definite pathology, of course, and at first it was thought their pot pourri of symptoms would vanish following proper surgery. In many instances they did, but as soon as confronted with new problem, either mental or physical, the entire structure tumbles down again.

The answer to all this is that there are many who have unstable nervous systems. Oliver Wendall Holmes once said, "Man is an omnibus in which all his ancestor's ride." Unfortunately, our patients do not bring their family trees containing elaborate case histories of their ancestors when they consult us. If they did our advice would more frequently be tintured with conservatism, and surgery would be attended with better end results.

It is my conviction that the surgeon of today, despite the wider range of his activity, has a keener appreciation of his obligation to society than ever before and

therefore is conscious of the importance of proper study of his case, which, in its final analysis, means that we are entering upon an era of conservatism and efficiency that will command the confidence of the most skeptical layman.

OUR DEBT TO MEDICINE OF YESTERDAY; OUR OBLIGATION FOR TOMORROW.*

B. S. WALLER, M. D.,

SILVER CREEK, MISS.

Permit me to express my appreciation for the honor you have shown me by having elected me president of this Association for this year. I want to express my appreciation also to our very efficient secretary, Doctor Markette, whose untiring efforts have accomplished what ever has been done.

In selecting a subject for an address for this occasion, I have selected one that is already common knowledge to you all: Our debt to medicine of yesterday, our obligation for tomorrow.

The practice of medicine is probably the oldest profession in the world. Our earliest definite information comes from Egypt 3000 years B. C. Scientific medicine, began with Hippocrates about 460 B. C. The Hippocratic Oath has a real value to modern as well as ancient medicine. I have not the time nor the desire to trace medicine through the nineteenth century, but with two important problems of diseases—cellular pathology, developed by Virchow, and its cause—microbic activity, which Pasteur demonstrated, the real science of medicine began.

All through the ages the faithful men of medicine have stood for education, culture and refinement. The title, Doctor, means a teacher; and the physician who

excels is performing the task of a teacher every day.

The progress of the world, in every department of human endeavor, seems in this generation to have received a wonderful stimulant and many amazing things have been accomplished; but human nature is so constituted that the miracles of yesterday are regarded as commonplace today; so the progress of medicine and surgery is accepted as a matter of fact and little thought is given to the men who devoted their time and often sacrificed their lives in an effort to serve their fellow man and make the world a safer place in which to live.

Many of the discoveries of medicine read like fiction. When the microscope first enabled us to comprehend the fundamental cellular structure of the body, the key to the ultimate interpretation of life was put into our hands. When Pasteur discovered the existence of cellular organisms capable of attack on human cells, he gave to our science its first knowledge of the cause of disease, the science of bacteriology was then born; through it pathology found a new interpretation and became a vital study. The culture tube and the reagent brought chemistry into the field and through the three, the laboratory became the center of medical investigation. Short though the time has been since the birth of these sciences, their contribution to human welfare has been of untold value. With them came the knowledge of the prevention of disease which from the lives saved and from a monetary standpoint, is beyond computation.

Cholera, which invaded the nations of the earth has become only a name.

We can not compute the number of children whose lives have been saved from diphtheria by the use of antitoxin, and better still, those immunized from this terrible disease by the use of toxin-antitoxin, to say nothing of the grief and

*Annual Address of the President; Tri-County Medical Society, Brookhaven, Miss., December 10, 1929.

anguish lifted from the hearts of the parents of the world.

Smallpox, another horrible disease, through vaccination, will soon be gone.

Typhoid fever, years ago, claimed its thousands; today, through modern sanitation and preventive inoculation it is fast disappearing and its existence will soon be a disgrace to a community.

We are indebted to the physicians, especially to Drs. Reed, Gorgas and their fellow helpers for discovering the cause and stamping yellow fever from the earth. One afternoon when Dr. Gorgas walking into the dissecting room at one of the government hospitals, in the Canal Zone, where a number of surgeons were at work on a cadaver, that had died of yellow fever, said: "Take a good look at this fellow, boys, for it is the last case of yellow fever you will ever see." This statement, though doubted then, has become true and Dr. Gorgas is known as the "world physician". The United States was able to build the Panama canal as a result of this discovery; this strip of land was converted into one of the healthiest spots of the world, and the canal has routed the commerce of the world.

Our predecessors, the men of yesterday, have wrought well; let us endeavor to emulate their example by carrying on in a manner commensurate with their accomplishments.

Any medical organization that is just marking time is retrogressing. Altruism in America while not in a flourishing condition, is far from being extinct. We know that it is one of the fundamentals on which the medical profession is founded and I hope it will continue to ramify through medical practice, softening and blessing its administration to mankind.

With the inspiration of such a heritage we should face tomorrow with confidence and determination to do our duty.

This is a different age, less romantic, but filled with problems to be solved.

The pioneers faced uncharted fields along untrodden paths. They surmounted every hardship and left the way fairly well blazed.

Progress must be our slogan. The doctor of today faces tomorrow a different man from the one who entered medicine fifty years ago. Then his equipment was meager, his only resources were his faculties of deduction derived from his own experiences. Today, he must be better educated, and aided by the knowledge of yesterday, with the resources that science gives, his responsibility as well as his opportunities are increased; he must resort to the laboratory and the hospital. Along with better education of the physician, the people have been enlightened and expect a new standard.

The family physician has ever been the bulwark of medicine. His has been the labor of love and superb endeavor to combat disease; confronted with the most desperate conditions he has with rare resourcefulness risen to his responsibilities. The intrepidity of the country doctor in the management of the emergencies of accident and disease, the perils of childbirth and the mastery of conditions under the most adverse circumstances is marvelous. His calling exacts the utmost that man can give, knowledge, a steadfast hand, exquisite judgment and skill, to be put forth not at any self chosen moment but daily at the need of humanity. He has to know how to gild the gloom of affliction's couch with the silver lining of hope. While the war trump, the muffled drum, the measured tread of armed men and the musket peeling over the grave, honor the death of the soldier, the physician who meets his death battling for truth passes to an inconspicuous grave, unhonored and mourned only by a few who knew his worth.

Medical science has advanced so rapidly that it has to be rewritten every twenty

years, so that we find ourselves trying to forget those things we once knew. As pointed out by G. K. Dickerson, "Should Henry Wark Beecher come back to his pulpit, he would find his preaching just as understandable and effective as in his day. Should Chief Justice Marshall return to the bench, he would find the law unchanged and his decisions acceptable; but should the most competent physician or surgeon of fifty years ago return, he would be at a loss, for he would be obliged to study medicine over; the surgeon would not be able to do the ordinary work required in the operating room."

The medical student of a decade ago was not taught preventive medicine; he was expected to cure the sick. He studied physiology, pathology and therapeutics, our faith was in drugs. Now, we know if people are to live longer and better, fewer drugs, better sanitation, fresh air, sunshine and diet must be our slogan; these truths must be taught and the fact that health is no longer a game of chance stressed. Retaining the benefits of these innovations, and making further progress against disease, depends alike upon the dissemination of knowledge concerning sound, scientific methods.

Our obligation for tomorrow hinges around prevention of disease. The rural doctors are getting fewer. In my county in 1915 there were twenty practicing physicians, today there are five. The people must be taught in the clearest manner possible, the fundamentals underlying health and disease; methods of preventing disease and the necessity of periodic health examinations. The early degenerative conditions of the vital organs, the heart, the kidneys and the brain must be detected while remedial measures might be effective. The span of life has been materially lengthened during the past decade, through the prevention of infant mortality. Preventive medicine has made wonderful progress in recent years. This was demonstrated in the efficiency of the

American army during the World War. Community health is getting in advance of the health of the individual. Too little attention is paid to those who are apparently in good health. Many people are shocked, when resting securely in the supposed enjoyment of good health, to find that an examination for life insurance revealed some unsuspected disease, that could and should have been easily detected long ago when a cure or, at least, a prolongation of life could have been attained.

Eternal vigilance, through the physician, is the price of lengthened life in the middle aged; we are facing today an increase in cancer, kidney and heart disease in this class of patients.

I am convinced that the physical basis for much of our inefficiency as well as illness and death from disease of adult life, comes from malnutrition or from improper eating. The properly nourished individual rarely develops tuberculosis, pellagra or other similar diseases; the well nourished person is less susceptible to the acute infectious diseases like influenza, pneumonia and many others. When the people understand the known facts regarding diet and nutrition and live accordingly, many of the health problems will be solved. There will be a remarkable reduction in the germ diseases and chronic digestive troubles as well as diseases of the heart, blood vessels and kidneys. If the adults of today will put into practice knowledge of food and vitamin values that are available to them, and their children are taught this, years can yet be added to the coming generation. Nutrition, has largely been responsible for bringing tuberculosis from first to fifth place among the causes of death in the United States. Who among us can realize what this has meant in bettering the conditions of life of the American people? This accounts largely for the fact of prosperity and standard of life unequaled by that of any other country. Disease has been the greatest single factor in producing poverty and misery.

Prevention, being my central thought in this paper, another problem of vast importance economically, and socially confronts us in the care and prevention of mental diseases. Progress in handling these lies in the general diffusion of psychiatric knowledge among the general profession, so that the patient will receive treatment months and years before the present stage at which they usually get treatment. This leads us to consider the pre-psychotic period. These tendencies can be observed in some cases even before the school age; these phobias, neuroses and psychoses of childhood are going unnoticed and with no concern. If a survey of our school children was made, a large number would be classed as nervous and excitable. The moron could often be recognized before the period of delinquency. I believe the psychiatric study of school children would prevent many nervous, unstable children from becoming the neurotic adults of tomorrow. We are confronted with the question—How can this group of morons, feeble minded, mentally unfit be prevented from propagating their kind into the coming generation? Our daughters are not only not being educated in such a way as to become good mothers, but are being educated not to become mothers at all. If this condition continues, the bulk of the future generation must come from the feebler minded element of the race, which propagates rapidly.

More than half of the hospital beds are occupied now by individuals suffering from some mental condition. A large per cent of the inmates of our penal institutions are mental derelicts. The individual, family and state loss from this class of citizens can hardly be estimated; they require institution and hospital care; they are incapacitated just as much as if they were sick with some physical disease. An obligation lies in trying to prevent the increase of this class of citizens. As physicians, we should stress the necessity of

sterilization of the low grade moron and mentally unfit. Some one has said:

“We talk of our breed of cattle,
And plan for a higher strain;
We double the food of the pasture,
And heap up the measure of grain,
To better the barn and pen;
But what are we doing, fellows,
To improve the breed of men”?

Medical students should receive more thorough instruction in psychiatry in our medical schools having for its object the institution of overdue reforms in the handling and treating of this class.

I believe the full time health unit, stressed by our efficient State Board of Health could be made to function along this line. The doctor in charge having received special training along this line, could detect the sub-mental school child, the border-line cases of insanity, and other conditions in need of treatment, especially the poorer class who, usually are denied treatment in the early and hopeful stage. This health unit might see and supervise discharged patients from insane hospitals, help them to find employment, and advise them when difficulties, domestic, financial and otherwise confront them.

I am persuaded that this would lessen the number of suicides that have been of late claiming a large class of our good citizens.

The present method of handling the mentally unbalanced patient is deplorable. Jails and asylums are full. To reach the latter institution, these mentally sick people have only one route: police station, sheriff, jail, court. He is branded as “crazy,” committed to the asylum. By the time he reaches this institution he is superstitious, non-cooperative and rebellious. The institution physician is burdened with three times as many patients as he should have under his care; he is given a hurried examination, his conduct is noted and he is left largely to associate with the chronic insane and he loses hope and interest.

Let us hope that Mississippi will soon have a new hospital where these patients can receive modern and effective treatment under the efficient staff that labors at present under such disadvantages. As physicians, let us ever be ready to serve. Here is our challenge and our goal; a prediction by a French philosopher, in the seventeenth century: "If ever the human race is raised to its highest level, intellectually, morally and physically, the science of medicine will perform that service."

PLANS AND FUNCTIONS OF THE NEW HUTCHINSON MEMORIAL BUILDING.*

C. C. BASS, M. D.,†

NEW ORLEANS.

The terms of the bequest of the late Mr. Alexander Hutchinson to the Medical Department of Tulane University provided for a memorial building to be known as the Josephine Hutchinson Memorial. The purpose for which the Memorial was intended is stated in Mr. Hutchinson's will as follows:

"I give the balance of my estate, real and personal, to the Tulane University of Louisiana, for the sole and exclusive benefit of its medical department; the object of this bequest is to create a fund to be used in increasing the efficiency of the medical department of the Tulane University of Louisiana, as a medical school and to contribute to its usefulness and beneficence in ministering to the ailments, injuries and other physical infirmities of the suffering and destitute poor of all races, ages, sexes and nationalities."

The following quotation from the bequest indicates the wish of the donor to provide also for a limited number of hospital beds whenever sufficient funds should be available for their maintenance:

"The aforesaid grounds and buildings to be used in the establishment of a free clinic or dispensary and for a hospital, to include in its wards such a number of free beds (also for the destitute poor)

as in the judgment of the faculty may be available within the limitation of this fund."

Since the Hutchinson estate was settled and the fund became available it has been invested partly in the present Hutchinson Memorial Building and grounds which, it has always been understood, was only temporarily serving the ultimate purpose of the bequest; in revenue producing investments for the support, in part at least, of the laboratories and clinics that have been conducted in the building; and in other real estate which was considered needful for the promotion of the ultimate erection and operation of a memorial, more fully in accordance with the wishes and intention of the donor.

Through judicious investment and administration the potential value of the Hutchinson Fund has increased considerably but during the same time the cost of the erection of buildings and their operation, especially as clinics, hospitals and medical schools, has also greatly increased. Under the circumstances, it has seemed necessary to postpone the erection of a new and permanent Hutchinson Memorial until recently, when the General Education Board agreed to give \$1,250,000 for the erection and equipping of such a building, without the necessity of drawing upon the Hutchinson Fund, all the income from which may now be used towards the operation and maintenance of the Memorial in accordance with the wishes of the donor. Although the income at present is not sufficient to provide for the operation of the building to its full capacity, it will be possible to make a good start, at least.

The purpose of the gift of Mr. Hutchinson was the promotion of medical education and the benefit and relief of the sick, and the chief purpose of the General Education Board, in its gift, was the promotion of medical education and advancement of medical knowledge in this community. All plans for the building and activities to be carried on therein have been made with these objects in view. A very high com-

*Read before the Orleans Parish Medical Society, October 28, 1928.

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pliment was paid to the Tulane School of Medicine by a representative of the General Education Board, who, after a thorough investigation of our work, made for the purpose of ascertaining the merits of our appeal for a donation for this building, stated that we were accomplishing more on a mere "shoestring" than many other schools were accomplishing with much greater resources at their disposal.

Ward or bed patients in a hospital represent the severe cases and the advanced stages of disease or injury, while those in the out-patient departments represent the earlier or milder stages at which time it is more difficult to make a correct diagnosis and proper treatment is of greater importance to the patient. Clinic patients correspond to the office patients of the practicing physician, of which he always has many more than he has of bad patients.

There has been a tendency in many schools during recent years to use the out-patient department more for teaching than formerly. Unfortunately, crowded conditions, lack of facilities and the large number of patients who must be seen in a short space of time often lead to incomplete examinations, inaccurate diagnoses, as well as to hasty and insufficient treatment and advice which do not constitute very good examples of practice to set before the medical student—the future physician. He is likely to continue, in his practice later, the same methods and practices that he sees and takes part in as a student. A smaller number of patients, more thoroughly examined and treated, would set a better example and be far more instructive to staff and students. With this idea in view, the new building has been planned to provide for the care of a limited number of patients by members of the staff and advanced students under conditions and with facilities corresponding, as nearly as possible, to those in private practice. Each examination and treatment room, in all departments, will contain, at least, the min-

imum equipment that is required for similar work in the private office.

While members of the teaching staff in the pre-clinical subjects have long been provided with laboratories and equipment for teaching and for their own study and research, the teachers in the clinical departments have been obliged to get along without them. In this new building we have provided well equipped offices, laboratories and other facilities for the clinical staff where they can pursue intensive studies and researches in connection with the care of their patients or otherwise. We are also providing accommodations and facilities for our own graduates or others who may wish to pursue intensive work and studies for a few months or years, in special fields.

The building has been located near the Charity Hospital with the idea that it should operate in the closest co-operation with that institution. It is hoped that the clinic patients cared for will help to relieve the crowded conditions in the Charity Hospital Clinic and that the facilities for study and research will be of great benefit to the resident and visiting staff of the hospital.

At all times, from the very first thought of this new building, there has been every intention to provide comfortable and adequate accommodations for the organized medical profession of this community, represented by the Orleans Parish Medical Society and the Louisiana State Medical Society. Tulane University is deeply interested in promoting the interests and welfare of the organized medical profession of the city and State, not only because a large part of the physicians are her own graduates, but also because the real function of the Medical College is promotion of medical science and advancement of medical knowledge.

The following resolution passed by the Tulane Board of Administrators and presented to this Society some time ago by Dr. M. J. Magruder, representing the Board,

expressed clearly the welcome always extended to the Society:

"Whereas, There exists at present an arrangement between Tulane University and Orleans Parish Medical Society, whereby the Society is extended the privilege of conducting its meetings and housing its library in the Hutchinson Memorial Building; and

Whereas, It is the purpose of Tulane University to foster and promote higher education and through its Department of Medicine co-operate with the organized medical profession in the advancement of medical science;

Be it resolved, By the Board of Administrators of the Tulane Educational Fund that we wish to extend to the Orleans Parish Medical Society the assurance of our good will and desire to continue the existing cordial relations, which will in no way be effected by the contemplated erection of a new building for the School of Medicine; other than a provision for more modern and better facilities for conducting the work of the Society."

Plans of the offices and accommodations have been submitted and discussed with the officers from time to time and both the State Society and the Parish Society, through their proper representatives, have expressed their approval of and satisfaction with them. We have had the helpful co-operation of the Library Committee of the Parish Society in developing the plans for the Library.

Perhaps the greatest single need of New Orleans as a medical center is a great medical library. Neither the Society, nor Tulane, at this time, has sufficient funds to finance the purchase of and subscription for all the books and journals that are needed. By keeping the collections owned by each institution close together and operating the library so as to avoid unnecessary duplications and yet make each available to all, it will be possible to make what funds we have go much further than they would go otherwise. This close co-operation and pooling of resources should ultimately provide one of the best collections of medical literature in the country, and our reading rooms will become a mecca for students of medicine in New Orleans, in Louisiana, and in the South.

We want the Parish and State Societies to feel that this is their home, to which they are always welcome and to accept the accommodations provided for them as an effort on the part of Tulane University to promote the interests of the organized medical profession.

INTESTINAL POLYPOSIS IN CHILDHOOD.*

A REPORT OF THREE CASES AND A SURVEY OF THE LITERATURE.

CHARLES JAMES BLOOM, M. D.,

NEW ORLEANS.

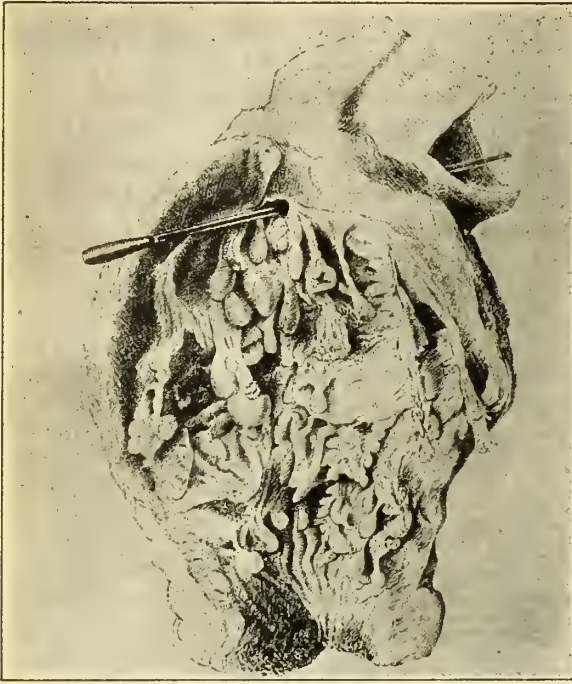
In a careful perusal of literature, it is evident that this subject has escaped the attention of the profession. Such an admission is permissible in light of an absence of literature in English, bringing to our attention another entity, most uncommon in the past, but apparently on the increase at this time. An absence of symptoms in some, indefinite signs in others, limited abdominal pain, explains how readily one can fail to properly diagnose these growths. If we add to the above, how few mothers carefully check and examine the daily excrements of their children, and how seldom the tumor is found, the rarity of case reports is clearly understood.

The writer is now reporting three cases in children, which have come to his attention during the past year.

HISTORICAL.

The earliest case reported in the literature was probably that of Menzel⁽⁷¹⁾, in 1721, whose patient was a boy, aged 15 years, with dysentery. At post-mortem it was observed that the growths of mucous membrane of the large intestines had great numbers of wart-like excrescences. There is no further mention of the condition until 1832, when Wagner⁽¹⁰⁵⁾, in describing the end results of ulceration of the colon, states, "that sometimes on the margins of scars and on smooth cicatrices

*Read before Louisiana State Medical Society, New Orleans, April 9-11, 1929.



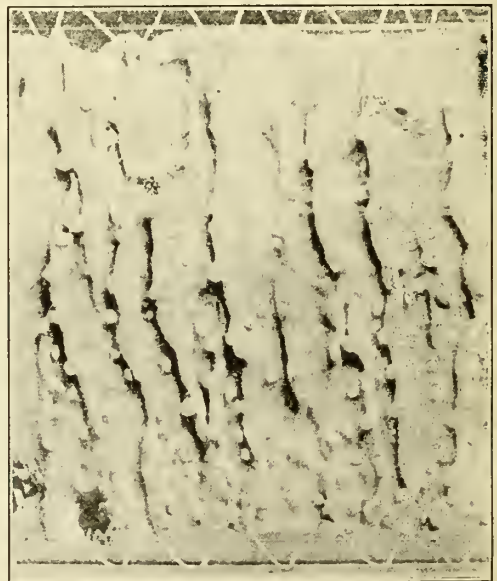
Interior of the rectum showing disseminated polypi and cancerous stricture. Recorded by Thomas Smith in St. Bartholomew's Hospital Reports, 1887.

of healed ulcers, tiny polypoid tumors were found."

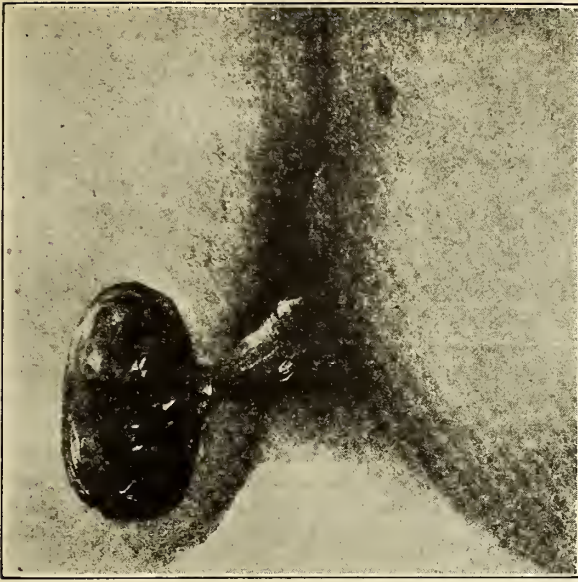
After this lapse of 111 years, the stimulus for investigation seemed to start, for in quick succession many articles relating descriptions and citation of cases are to be found in foreign magazines, especially in Germany and France. Unfortunately, but few of the original articles have been obtained, but are herein included so as to give us an idea as to what has been written on juvenile polyposis.

Case reports and articles pertaining to children have been described by: Schneider⁽⁸⁶⁾, Tott⁽⁹⁶⁾, Bodenshtab⁽¹¹⁾, Gigon⁽³⁸⁾, Dotzauer⁽²⁵⁾, Schutte⁽⁸⁹⁾, Guersant⁽⁴⁰⁾, Perrin⁽⁸¹⁾, Vallez and Guillery⁽¹⁰⁰⁾, Barthelemy⁽⁶⁾, Raymondau⁽⁸⁴⁾, Lutton⁽⁶⁸⁾, Stoltz⁽⁹⁴⁾, Nelaton⁽⁷⁵⁾, Gallois⁽³⁷⁾, Joelson⁽⁴⁹⁾, Name unknown⁽¹¹¹⁾, Paul⁽⁸⁰⁾, Kronenberg⁽⁵⁹⁾ and Virchow⁽¹⁰²⁾. The latter "gave microscopic findings in a boy aged 15, who had dysentery. The polypi were vesicular, with fluctuating prominences, and many of them had scattered over their surfaces small openings from which

gelatinous material protrudes and could be expressed. Under the microscope these vessels were found to be dilated crypts of the glands of Lieberkuhn, filled with a mucous material . . .". A third article by Guersant was published in 1864, and a very interesting work by Bokai⁽¹²⁾. Vachey⁽⁹⁷⁾ contributed a singularly good narrative. But it was not until 1882 that real interest was stimulated by Cripps⁽²⁰⁾, who was fortunate enough to observe three cases, all occurring in the same family. This, to my knowledge, was the first report coming from the pen of an Englishman. "His first patient, a boy of 20 years, had first noted rectal bleeding when he was 10 years of age. During the ensuing 10 years he was repeatedly operated upon and polyps were removed per rectum with temporary relief only. When seen by Cripps, patient was suffering from a marked secondary anemia, painful defecation, bloody mucous discharge and, at times, profuse rectal hemorrhage. He could, at will, protrude an egg-size mass from the rectum and a proctoscopic examination disclosed, as far as eye could reach, the rectal wall thickly studded with



Portion of jejunum, profusely studded with small polypoid excrecences. Illustrating Kanthack's and Furnivall's case of multiple polypi of the small intestines. (1897).



Prolapsed rectal polyp. (Collection of Dr. I. A. Abt.)

vesicular, pedunculated tumors varying in size from a pea to a cherry."

Congenital intestinal polypus in a female of 8 years, was reported by Floyer⁽³⁶⁾. In 1890, Dunn⁽²⁹⁾ cites a case of multiple polypi of rectum as follows: "These polypi, numbering about thirty, were removed at one sitting from the rectum of a boy aged 10 years, at the East London Children's Hospital. The masses vary in size from a pea to a large bean. Under the microscope they are seen to consist of the usual glandular structure. The clinical history referred only to the passage of blood by rectum and occasional prolapse of one of the masses. The growths were removed chiefly by being twisted off with forceps; the larger masses were ligatured and cut away. The patient made a good recovery." Bickersteth⁽⁹⁾ gives case histories of multiple polypi of

the rectum occurring in mother and child. Shattock⁽⁹¹⁾ records case of "polypi of lymphatic tissue from a child's rectum."

Additional articles continued to be contributed by foreign writers, and one or two from this country.

Bossert⁽¹³⁾, Lindner⁽⁶²⁾, Kanthack and Furnivall⁽⁵³⁾, Leclerc⁽⁶⁰⁾, Felicet and

Branca⁽³⁵⁾, Cathelin⁽¹⁷⁾, Vajda⁽⁹⁹⁾, Kammerer⁽⁵²⁾, Aronheim⁽⁴⁾, Adler⁽²⁾, Niemack⁽⁷⁸⁾, Cazal⁽¹⁸⁾, Psaltoff⁽⁸³⁾, Meyer⁽⁷³⁾, Judet and Baldenweck⁽⁵⁰⁾, Dewis⁽²³⁾, Von Mettenheimer⁽¹⁰⁴⁾, Bindi⁽¹⁰⁾, Doering⁽²⁴⁾, describing 52 cases, reports youngest at 12 years. Feldner⁽³⁴⁾, Schneider⁽⁸⁷⁾, Albu⁽³⁾, von Bokay⁽¹⁰³⁾, Federici⁽³²⁾, and d'Arcis⁽²²⁾ confined their descriptions of polypi to children alone. Mr. Hamilton Drummond⁽²⁷⁾ (discussion-Norbury 1913) had had the opportunity of watching a case operated upon by Professor Rutherford Morison. A boy, aged 13, had a left colostomy done for multiple polypi of the rectum from which hemorrhage had been a most severe symptom. The colostomy was left open for about 18 months, during which time the rectum was washed out daily with saline solution through the colostomy wound. After 18 months had elapsed, sigmoidoscopic examination showed the rectum to be normal, and all signs of the polypi had disappeared. The colostomy was closed and the boy now worked as an apprentice fitter. It was now over three years since the closure of the colostomy wound.

It is suprising, even at this time, how few case reports are being brought to our attention.

Hertz⁽⁴⁶⁾, Newbolt⁽⁷⁷⁾, Bratrud⁽¹⁵⁾, Lorenzini⁽⁶⁶⁾, Neuhoof⁽⁷⁶⁾, Soper⁽⁹³⁾, Bevers⁽⁸⁾, Erdmann⁽³⁰⁾, Marcus⁽⁷⁰⁾, Gruget⁽³⁹⁾, Bouvier⁽¹⁴⁾, Barrington-Ward⁽⁵⁾, Jungling⁽⁵¹⁾, Wheeler⁽¹⁰⁸⁾ and Muniagurria⁽⁷⁴⁾ contribute to the completion of the literature up to 1929 on intestinal polyposis in childhood.

The following are the three cases seen by me during the year 1928 and are herein described in detail:

Case 1. Richard L. was the only child of healthy parents. Having been under my care since he was two weeks of age—now having reached his third birthday—his past history was known in detail. At one year, vaccine therapy was given, curatively for a mild attack of per-



Illustrating Case No. 1.

tussis. In close sequence—a tendency to frequent attacks of tonsillitis was noted, many times being followed by a very disturbing elevation of temperature, periodic in character, and lasting sometimes for weeks.

The feeding program was very carefully planned, though he always lacked the desire for food so often observed in infants.

In April, 1926, having apparently a disgust for food, and showing objectively signs of secondary anemia, a complete examination was made:

May 14, 1926. Urine: negative. Blood: Hgm. 95, leukocytes 8250, S. 62, L. 5, N. 32, E. 1, B. 0. Feces: negative.

May 20, 1926. Blood: Hgm. 95, erythrocytes 2,465,000, leukocytes 9000.

May 20, 1926. Radiologic examination of the sinuses shows a very slight opacity of the left antrum compared with the right. The remaining sinuses are undeveloped. The examination of the chest shows a slight thymic enlargement to the right, extending 2.5 cm. to the right of the median line. The lungs are clear and apparently normal.

For the first time, evidence of a murmur was noted—systolic in character, which eventually was diagnosed as mitral regurgitation. Though various tonics by mouth and hypodermically were given no apparent improvement could be seen. The tonsils were now large, anemia still present, and the murmur rather marked. Accordingly, his tonsils and adenoids

were removed in May, 1926, and displayed definite pathology.

Prior to his leaving New Orleans in June of this year, with his cooperation, a positive D'Espine was elicited. An afternoon elevation of temperature was recorded often during his absence. Returning home in September, 1926, he spent a healthy winter. As a matter of interest, he remained well up to July, 1927.

Intestinal Symptoms: Richard had always belonged to that group of children who are very difficult to feed, and, though his weight was within normal limits, he apparently appeared underweight. Amusements of various sorts were necessitated by his antipathy toward food. This unquestionably influenced a costive tendency. Several times, small amounts of blood were noted, either on the outer surface of a constipated stool or at times following a constipated evacuation.

In July, 1927, the little fellow seemed to have gone backward—his weight was stationary—33 lbs. His old symptoms of afternoon elevation of temperature, anemia, loss of appetite, reappeared to a very marked degree, though the murmur had now become inappreciable; the D'Espine sign was negative. Breath sounds were somewhat abnormal and his cardiac area was increased.

July 7, 1927. Blood: Hgm. 75, leukocytes 10,000, N. 43, S. 54, L. 3.

July 7, 1927. Radiographic examination of the chest shows a slight glandular enlargement at the hilum of both lungs with some slight infiltration in the lower portion of the left lung. The aorta shows a distinct enlargement to the right and left, its outline being clearly visible behind the heart. The heart is slightly enlarged to the left and right.

While his physical condition was being checked, on the afternoon of July 9, 1927, for no apparent reason, he complained of pain in his abdomen, seemed nauseated, and refused to eat his midday meal. He expressed a desire to have a stool and, upon completion of same, much to the surprise of his mother, she discovered macroscopic blood, together with a fleshy mass, mixed in with the fecal matter. She summoned me quickly, and, knowing the conservative parent she is, I lost no time in going immediately to her assistance. Indeed, what had been described was correct, even to detail, but, in her excitement, she had overlooked a peduncle associated with the mass. A small walnut would approximate the size of this abnormal constituent of the stool. When the question of diagnosis

was asked., I refrained temporarily from giving an opinion, the tissue having, in the meanwhile, been given to the pathologist.

From this time on, there was no discomfort. A light cooked soft meal was relished by him, he frolicked around and seemed in better spirits than he had been for days.

This unusual tumor worried me—my first thought being a mucous polypus—particularly because it was pedunculated. But not having had a similar case in the past, and not having reviewed the literature, the opinion of the microscopical examination was awaited with interest. At seven o'clock the same evening he had a second movement, formed rather hard, containing a large clot of bright red blood mixed with feces, and a rather large amount of bright red blood scattered throughout, particularly at the end of the movement. Then the thought struck me that my original tentative diagnosis was the probable one. This clot occurred after the separation of the mass from the abnormal wall—remaining in situ until another stool was in progress. This, in turn, irritated the surface of the bowel, where the peduncle was originally attached, producing a small hemorrhage.

Pathologist's report: Examination of the piece of tissue from Richard L. shows it to be a polypoid growth, made up largely of granulation tissue, partly covered by epithelium. It is the seat of an active inflammatory reaction, mostly of sub-acute and chronic type, although a few areas of acute exudate are noted. There is no evidence whatever of a new growth or of any specific type of inflammation and I feel that the condition is one of mucous polyp.

As a matter of coincidence, he seemed to improve—appetite, color and disposition—a changed child. No occult blood has been found since. At this writing, April, 1929, no evidence, either microscopic or macroscopic, suggestive of a polypus, has been observed.

Whether this is the type where one polypus is noted, or whether there is more than one, remains yet to be seen.

Case No. 2. The history of the second case is somewhat incomplete, as the parents of the child did not cooperate with me—due to superstition and ignorance.

Frank P., Jr., aged 4 years, was the son of a trapper. The child had always lived along Bayou Barataria, a region where mosquitoes were plentiful, and malaria very common. The drinking water was obtained from old-fashioned cisterns, whose sources of supply were filthy roofs. These reservoirs are always unsanitary. Diet

was an absent quantity in his bringing up—as these children receive table diet almost from infancy—limited milk and meat—large amounts of shell fish—questionable amounts of fresh vegetables.

He was brought to me March 1, 1928, when 4 years of age. For fifteen months, blood had been noticed in his movements, and as no improvement had been observed, his parents suddenly became alarmed. There was nothing in the past history that would materially assist in the diagnosis.

His physique was diminutive—being 31¼ inches, and weight just 27¼ pounds—considerably under normal, though he was 9 pounds at birth. As a natural association, his physical development was far below the average for one of his years. Other than history of restless nights and lack of appetite, little data could be obtained.

The findings are as follows:

March 3, 1928. Urine and feces: negative. Feces: (rectal tube) negative for amoeba; occasional red blood cell, no mucus. Blood: Hgm. 90, erythrocytes 5,250,000, leukocytes 10,500, N. 56, E. 4, S. 36, L. M. 4.

The same plan of differential diagnosis as explained was utilized and a diagnosis of intestinal polypus was decided upon. A short time later on, a telephone message conveyed the news that a fleshy mass had been passed, but I was not able to recover the "fleshy mass."

Case No. 3. Carolyn S., aged 4 years, was referred to me, in the fall of 1927, by Dr. Charles Catchings of Woodville, Miss. She appeared in splendid health and did not outwardly reveal any visible signs of anemia, though "she had had bowel trouble—with stools containing blood—for the period of one year."

Knowing the tendency of mothers, at times, to exaggerate—past histories must be thoroughly gone into, and accepted with elements of doubt. But there are exceptional cases, where such stories are actual facts and must be accredited as true. This mother assured me that the substance passed was "bright red blood"—not in small amounts—but emphatically stated "in large quantities." Then, very naturally, the question arose—what conditions could produce this particular symptom? If it had not been for the fact that two other cases not unlike this one had been examined by me in the past year, the diagnosis would have been extremely difficult.

She was well developed for one of her years—height 38¼ inches; weight 31¼ lbs.—though



Illustrating Case No. 3.

2¾ lbs. underweight she was within normal limits. Her musculature was good, there was no reason to believe that her illness had incapacitated her in any way. Carolyn's disposition had not been spoiled, and neither had sleep been affected. Her bowels were regular; no purgatives had been necessary as is the case in most children. There was no criticism of the diet, though at times her mother would indulge her, and give "goodies." Other than a slight flaring of her ribs, submerged tonsils, and a history of measles in the past—the birth, familial and past history is of no particular interest.

The results of the first examination are as follows:

October 11, 1927. Feces: No parasites, larva or ova found; no mucus or pus. Occult red blood was present.

October 12, 1927. Urine: negative. Feces: negative.

October 13, 1927. Radiologic examination of the gastrointestinal tract shows the stomach rather large and somewhat dilated. There is evidence of a marked pylorospasms. The stomach empties slowly.

The second observation made three hours later shows the stomach about two-thirds empty with again evidence of considerable spasm.

Six-hour observation shows the stomach entirely empty with the head of the opaque column in the descending colon. There is a marked spasm of the colon throughout at the present time. The appendix is clearly seen at this time

rather long and extending deep into the pelvis, and shows some constriction along its course.

Twenty-four-hour observation shows a moderate cecal and colonic stasis with again a spasm of the colon. The appendix is still seen showing a marked kinking and again evidence of constriction along its course.

Forty-eight-hour observation shows still a definite filling of the appendix. There is a slight colonic stasis.

Conclusion: Pylorospasm, spasticity of the colon, cecal a colonic stasis, probable appendicitis.

After carefully eliminating the less frequent causes of blood in the stool—the final differential diagnosis rested with the following possibilities:

1. Amebic dysentery.
2. Appendicitis (type where intestinal parasites—especially pin worms—are found in the appendix).
3. Injury due to foreign bodies being introduced into the rectum as an expression of perversion.
4. Internal hemorrhoids.
5. Malignancy.
6. Polypus.
7. Intestinal parasites (hookworm).

Amebic dysentery was considered because there are atypical cases where feces examinations are negative at first, but where, ultimately, the amebae will be discovered.

Appendicitis could not be eliminated because I have seen blood in the stools where intestinal parasites were finally found in the appendix.

Perversion thought of, but not seriously so.

Internal hemorrhoids: The amount of blood is not in keeping with this possibility, and the age of the child would negative it.

Malignancy uncommon, and physical make-up readily eliminated this is a probably cause. As a matter of interest, I have only seen but three cases of intestinal malignancies.

Polypus: The most probable diagnosis—viz.: blood in large quantities at times, though found microscopically in the interim; no marked anemia nor cachexia—apparently not producing symptoms affecting the child to any marked degree.

She was returned to her physician for further observation—diet, general tonics and intestinal lubricant ordered, and her return requested.

In the spring of 1928, a second examination was made, as there had been no apparent improvement in her physical state in the eight months that had elapsed. She was now some 5 pounds underweight.

A second gastrointestinal series was undertaken, laboratory tests rechecked, with the findings as follows:

June 19, 1928. Radiologic examination of the gastrointestinal tract shows a marked spasm of the pylorus. At the end of three hours the stomach was about $\frac{3}{4}$ empty and the head of the opaque column was in the transverse colon. The spasm of the pylorus is still apparently as described previously. At the end of six hours there is still a retention in the stomach with again evidence of a spasm of the pylorus and the head of the opaque column was at the splenic flexure. Twenty-four hour observation shows considerable colonic stasis with highly spastic bowel.

Conclusion: Highly spastic gastrointestinal tract. (Forty-eight hour observation to be made).

June 18, 1928. Feces: Negative for parasites, pus and R. B. C. present; no mucus.

An appointment was made for a proctoscopic examination. As a matter of interest, one hour prior to this appointment, the mother telephoned in great distress, informing me that her child's intestines were protruding through the rectum and bleeding profusely. Within a short time, she was in my office and, much to my surprise the polypus had protruded through the rectum—the bleeding having become less due to the constriction of the rectus ani around the peduncle. The growth was the size and shape of a hickory nut—rather small—reddish gray in color, and quite vascular and fleshy. The peduncle was fully $1\frac{1}{2}$ inches in length—about the size of the average lead pencil. The diagnosis had been confirmed.

She was immediately operated upon, with no aftermath and, since that time—as far as I know—the bleeding has ceased—leading me to infer that this was the solitary tumor.

The operative report and pathological findings are now given:

Operation (Dr. P. Graffagnino): With the rectal speculum, the sloughing polypoid mass was exposed, clamped, ligated and severed between clamps. The base was cauterized and one pack introduced.

June 20, 1929. Laboratory Report (Dr. John Lanford): Specimen is nearly a spherical mass about 2 cm. in diameter. It is soft in consistency and section shows very little resistance. The cut surface is exceedingly moist and a very dark red in color.

Microscopic diagnosis: Rectal polypus, showing acute and chronic inflammatory reaction with some cystic spaces. Local hyperplasia of mucous lining.

PATHOLOGY.

At the present time, the nomenclature of tumors of the intestinal tract, both of congenital and acquired origins, is very difficult to comprehend. A clear and simple classification would unquestionably aid those of us who are interested in pathology, but who are potentially clinicians.

Various theories and groupings are as follows: Virchow⁽¹⁰²⁾, first described the disseminated form, terming his case "colitis polyposa cystica." Hauser⁽⁴²⁾, speaks of the condition as "polyposis intestinalis adenomatosa," and "is a strong advocate of the theory that simple polypi of the colon may become malignant." Meyer⁽⁷²⁾, believes that intestinal polyposis is congenital. Huber⁽⁴⁸⁾, "has attempted to show that these tumors are a result of a general systemic lymphatic hypertrophy," and quotes etiological viewpoint and remarks of Dr. J. P. Tuttle of New York as representative of the current views at that time. He also reports on the findings or conclusions, of the following: Lilienthal⁽⁶¹⁾, Beach⁽⁷⁾, Vajda⁽⁹⁹⁾. Cripps⁽²¹⁾, called attention to the great rarity of disseminated polypi. He quotes three cases, all members of one family, observed during life, and three specimens in the London museums. According to Handford⁽⁴³⁾, in Mr. Cripps' specimens "the fibrous tissue of the stalk, on entering the head of the polypus, expands, forming a central nodule of fibrous tissue. Radiating from this central nodule are fibrous branches of greater or less extent. From these main branches fibrous twigs are given off, which, expanding into a delicate retiform tissue, furnish the supporting framework

of the epithelial covering. The epithelial covering consists of a single layer of columnar cells arranged in a bipenniform manner on the retiform tissue." Handford further states that the adenoid polypi described by Mr. Cripps seem to have been produced on the type of the intestinal villi. . . .". Verse⁽¹⁰⁾, realizes the difficulty of classification. Adami⁽¹⁾, accepts polypoid tumors of intestinal tract as having structure not unlike that of adenomata. Kaufmann⁽⁵⁵⁾, regards adenomatas as both polypoid and papillary. Bratrud⁽¹⁵⁾, suggests "gastro-intestinal polyposis." Hertzler⁽⁴⁷⁾, refers to intestinal polyposis as a potential hyperplasia of the mucous membrane. Struthers⁽⁹⁵⁾, believes that "for the sake of convenience, tumors of the intestinal tract may be divided into three groups. The papillomas are those tumors in which the surface epithelium, either cutaneous or mucous, is involved; they are usually found low down at the mucocutaneous margins. Polypi result from hypertrophy of the mucous membrane, or originate as true tumors. The adenomas from the group in which the neoplasms are derived from pre-existing glands or glandular remnants. . . . This is the so-called multiple polyposis or colitis polyposis (cystica). . . . The pedicled growth is most common in children, and the fact that there were no cases of children in this series may account for the absence of cases of intussusception." Helmholtz⁽⁴⁵⁾ in his article "chronic ulcerative colitis in childhood" reports five cases of this condition in children, and states in part: . . . "The anatomic changes had been described, no doubt in its terminal stage, by Virchow⁽¹⁰²⁾ and others, as polypus of the colon, the polypi being formed by a proliferation of the islands of mucosa in the ulcerated colon. . . ."

Drueck⁽²⁶⁾, discussing the benign tumors of the anus and rectum, has the following description:

"Adenoma. . . . The majority of rectal polypi belong to this class and rectal

adenomas are so often referred to as polypi that many practitioners consider the terms synonymous. Such, however, is not the case. All polypi are not adenomas, neither are all adenomas polypi. Adenomas undergo hyaline, myxomatous or cystic degeneration but do not develop metastasis. They are found in all ages although those occurring in children differ very much macroscopically, microscopically and clinically from those present in adults. Two different types of adenomas exist, the single adenoma with the long pedical usually found in children, and multiple adenomas, having broad attachments and usually found in adults."

"Single Adenoma. In children there is usually a single adenoma or at most but three or four, varying in size from that of a cherry to perhaps a hen's egg, each with a slender peduncle which may measure up to six inches in length, depending upon the size and age of the tumor. If the mass has been dragged upon for a long time by the bowel trying to expel it, the pedicle becomes stretched and attenuated. The tumor itself much resembles a red raspberry in appearance. It is ovalshaped, bright red, with a rough surface and consists of a preponderance of connective tissue with a small amount of glandular and epithelial structure. This type of adenoma usually occurs in children under twelve years of age, although it is sometimes found in adults."

Schultz⁽⁸⁸⁾ in his chapter on non-malignant growths of the intestinal tract, states as follows:

"Papilloma: In the intestine a papillary surface arrangement may be associated with the formation of glandular structures; pure intestinal papillomas are less frequent than pedunculated polypoid tumors, with a purely glandular character. Both forms are often congenital, and may show a tendency of familial occurrence.

"Adenoma: Benign tumors, originating in glandular epithelium, are characterized

by the formation of glandular acini or lobules, which usually reproduce fairly closely the normal structures from which the tumor has arisen. So long as the tumor remains benign the epithelium is well differentiated and is sharply delimited from the surrounding stroma. The most frequent example of adenoma in childhood, is the glandular polyp of the intestine. While such polyps may occur anywhere in the tract, they are most often situated in the rectum. They are pedunculated and are composed of cellular, lymphoid stroma in which the glands, lined by single layered columnar epithelium, are embedded. Twisting of the pedicle may lead to spontaneous amputation of the polyp."

Erdmann and Morris⁽³¹⁾ in a splendid survey of the subject, conclude:

(1) "for the purpose of standardization, it is suggested that the term 'polyposis of the colon' be limited to designate an adenomatous hyperplasia of the intestinal mucous membrane, as opposed to those polypoid tumors of the intestine which are histologically fibromata and myomata, etc;

(2) polyposis of the colon appears to be a uniform, non-specific mucous membrane reaction, variable only in degree to a chronic irritant in the presence of a preternaturally sensitive mucous membrane;

(3) it is manifested grossly as scattered intraluminary tumors varying in size from a split pea to a grapefruit and has a specific predilection for the large gut and rectum which predilection increases in direct proportion as we proceed from the ileocecal valve.

(4) two clinical types may be distinguished; (a) the adolescent variety, signaling itself in early youth by chronic, recurring attacks of intestinal hemorrhage and diarrhea and showing a distinct tendency to involve members of the same family; (b) an acquired variety first appearing in adult life in association with frank evidences of chronic traumatic and inflamma-

tory lesions to which they are evidently secondary.

(5) the two types have in common (a) the marked predilection for the large gut. (b) a malignancy incidence of more than 40 per cent. and a tendency to chronic intestinal hemorrhage and diarrhea. They are dissimilar in that the one (adolescent) is widely disseminated, appears in almost countless numbers and shows no gross evidence of a causative lesion; while the other (adult) occurs in limited numbers and extent with, almost invariably, associated gross evidence of trauma, inflammation, or foreign body. The one is essentially a disease of early life while the other occurs in middle or late life, the cumulative result of prolonged irritation incident to years of functional activity of the gut.

(6) In the presence of persistent and unexplained rectal bleeding and dysentery in early life, suspicion should be aroused of the existence of the adolescent form of polyposis of the colon; in adults, although a relatively less frequent cause, its consideration should not be neglected in a differential diagnosis of an obscure case of bleeding and dysentery"

Lockhart-Mummery⁽⁶⁵⁾ classifies innocent tumors of the dectum as follows:

Tumours of Congenital Origin.

Hypertrophied Pa pill. Naevi	Dermoids
Cirroid aneurysm or cavernous naevus.	Post-sacral, pre- sacral, contain- ing glioma cells and ciliated cells.

Acquired Tumours

Warts	Adenomata
Villous and papil- lary	Single
Infective papillo- mata	Multiple
Tuberculide	

Fibroid Polyps

These probably arise most frequently from strangulated piles.

Lipomata**Adenomomata****Chordoma**

Chordoma **Sacro-coccygeal**

Carcinoid

The word "innocent" is used by the writer only in a comparative sense as he believes that few, if any tumors of the rectum are innocent of causing trouble, a great many so-called innocent tumors being malignant—potentially speaking. He believes that the recognition of this and the removal, wherever possible, of all innocent tumours as soon as possible, is one of the great advances of modern surgery.

He then defines the various terms in the classification above, but, for the sake of brevity, only fibroid polyps and adenomata will be treated.

"Fibroid polypi are fairly common, and a great many varieties are met with. Fibroid tumors of the large bowel appear to originate most frequently as the result of some form of injury. Thus, fibroid polypi in the anal margin usually arise from strangulation piles. The pile probably becomes strangulated and eventually is returned into the rectum, where, as the result of inflammation, it slowly becomes converted into fibrous tissue. Such fibroid polypi tend slowly to increase in size. I have seen some of them as large as pigeon's eggs. Again, in cases of hyperplastic tuberculous stricture, it is very usual to find large numbers of polypi associated with the stricture; exactly how these arise is at present rather uncertain."

"By far the commonest variety of innocent tumor met with in the neighborhood of the rectum and colon in an adenoma. Adenomata occur in two main varieties. They often occur as single, small tumors, which may grow to a very considerable size and are then called villous tumors or

papillomata. . . . They give rise of considerable bleeding and much mucous discharge. When examined they are quite soft and often cover a very considerable area of the rectum."

"In my experience they are more often sessile than pedunculated."

"Another variety of adenoma is multiple adenoma, or, as it has been called, adenomatosis or colitis polyposa. This condition appears to be a familial disease. The number of polypi which may be present in one individual runs into hundreds of thousands, and the entire bowel may be packed with them from the ileocaecal valve to the anus. The great majority are very small, but some may be as large as pigeon's eggs. . . ."

C. Dukes⁽²⁸⁾ in the discussion following Lockhart-Mummery's address, pointed out that the words papilloma and polyp were gross anatomical terms, giving no information as to minute structure or function.

Saint⁽⁸⁵⁾ relates confusion as to meaning of "polypus of intestine" and believes in the necessity for being specific from the histologic standpoint.

Perhaps some diffuse inflammatory condition might be a factor stimulating a growth of this nature, but no explanation has concretely substantiated this conclusion.

FAMILIAL.

Hereditary tendency has been recorded in a very limited number of reported cases in children. Cripps⁽²⁰⁾ cited three cases occurring in one family. Smith⁽⁹²⁾ describes three cases of multiple polypi of the lower bowel—two brothers and their sister—(apparently same as those referred to by Cripps). Bickersteth⁽⁹⁾ called to our notice a multiple polypi of the rectum in a boy; search of hospital records revealed that the mother had suffered precisely in the same way and a brief summary of her case from the age of 10 years until her death of phthisis at 29 years, is recorded. Huber⁽⁴⁸⁾ has observed cases "in a few instances

occurring in members of the same family; in two instances the patients were cousins." Niernack⁽⁷⁸⁾ reports case of female, 12 years, whose father apparently became affected with same condition after her death, and a nephew who subsequently came under his care and 2 large pedunculated polyps 5 in above anus, found. Zahlmann⁽¹¹⁰⁾ reported six cases occurring in one family. Doering⁽²⁴⁾ patient was a boy, aged 16, whose mother and uncle died from a cancer of rectum. Hertz⁽⁴⁶⁾ interestingly tells us of four cases discovered in one family, all children.

SYMPTOMS.

Many clinicians, I am sure, will be somewhat skeptical in accepting the statement that—in some instances—definite symptoms are wanting. At best, there are but few outstanding suggestive signs warranting this as a possibility in a differential diagnosis.

From another tangent—the symptoms vary within wide margins. There might be tenesmus and bleeding if the site of the polypus is in the rectum. Anemia—at times cachexia—are mentioned in case histories, granting that in rare instances, there is but a single polypus, such as is told by Fee⁽³³⁾: September 13, 1845, Fee was summoned to see a 10-year-old girl, who, one hour previously had had a bloody discharge from her bowels amounting, according to the mother's estimate, to more than a quart, and also discharged, at the same time, what he considered from description to be a polypus—said by the parents to be somewhat larger than a partridge egg, of oval form, studded over the outer surface with hemispherical prominences, filled with a sero-purulent fluid, the peduncle being about the size of a large goose quill. This specimen was left on the ground, where it was examined, and swallowed by the poultry before the arrival of Dr. Fee. The patient was found to be much prostrated, with pulse scarcely susceptible, cold extremities, a sense of stricture at the precordia, and distressing nausea.

Tumor: (a) Size (small pea to walnut). (b) Number (single or multiple—single in each case of this series). (c) Consistency. Polypi, common in the lower rectum, though met higher up, usually originate within an inch or an inch and a half from the anus and are attached by a pedicle varying in length and thickness. If of the soft variety, they may be villous or glandular. The villous vary in size from a pea to a Concord grape and are pedunculated; the glandular or cystic form has a shorter and thicker pedicle. This form is apt to undergo malignant transformation. Both bleed freely. In the mixed variety, the polypi are hard and the tumor contains elements and submucous cellular tissue. The importance of bearing in mind the "fact that the growths contain the constituent elements of the mucosa and submucosa will be appreciated later on." (d) Type, pediculated or sessile. (e) Color, red to purplish. (f) Position, within internal sphincter, or in bowel as a whole—often in region of ileocecal valve. (g) Bleeding or hemorrhage. (h) Abdominal pain, "The history of repeated attacks of colic with symptoms pointing to obstruction, as illustrated by reported cases, should suggest polyposis in obscure cases." (i) Digestive disturbances: "The single polypoid shaped tumor occurring in children, may be extruded only during acute digestive disturbances accompanied with powerful peristalsis and tenesmus. At other times, when retained within the bowel it may cause obscure digestive disturbance with diarrhea."

Another author states that remarkable feature of the case is attacks of abdominal pain ever since birth. . . . "

DIFFERENTIAL DIAGNOSIS.

Where the tumor is recovered, the diagnosis is relatively simple, but in difficult cases, the presence of blood, and an occasional abdominal pain may suggest the possibility of some intestinal growth. Blood in the movements of children is very significant and important. What does it mean?

In passing, it may be of interest to those whose practice is not devoted to pediatrics, to know the possibilities in these cases. Briefly, they are:

- | | |
|--------------------------------------|--|
| 1. Volvulus | 11. Banti's disease |
| *2. Intussusception | 12. Tuberculosis (Intestinal) |
| *3. Amebic dysentery | 13. Typhoid |
| *4. Ileo-colitis | 14. Paratyphoid |
| 5. Ulcers (peptic and duodenal) | *15. Constipation |
| 6. Appendicitis | 16. Foreign bodies |
| 7. Intestinal parasites | 17. Fissures of rectum |
| 8. Ingestion of poison | 18. Hemorrhoids |
| a. food | 19. Malaria |
| b. drugs | *20. Polypus and Benign Tumors |
| *9. Malignancy | 21. Perversion. |
| 10. Blood dyscrasias | * These are the most commonly noted, of the above. |
| a. hemorrhagic disease of newly born | |
| b. purpura | |
| c. hemophilia | |
| d. leukemia | |
| e. pernicious anemia | |

Proctoscopic: A proctoscopic examination will oftentimes render certain the diagnosis. Placed in position, the tumor will immediately be recognized.

Radiological: Radiological examinations, as yet, have been of no special aid in the diagnosis of this condition.

Prolapse: Where there is a tendency to prolapse, with no association of constipation, and where the ordinary measures fail to relieve, or obviate this relaxation of the bowel, one must think seriously of polyposis as a possible factor. This is especially true in cases where one growth is found, for the reason that the site of predilection is one not more than a few inches from the rectum.

Neuhof⁽⁷⁶⁾ excluding the transient prolapses of infancy, states that thirty-three instances of rectal prolapse in children had been observed in the past three years—and in ten cases a rectal polyp was found. He stated that the coexistence of rectal polyp and prolapse is probably not as frequent as these figures indicate, for only when polyp was either felt or suspected were a number of the cases of prolapse referred from two of the pediatric departments. Polyp was removed in eight of ten cases. Of these six could be traced and all had been cured of prolapse by excision of the polyp. He reported a fact worthy of note that in not a single instance could the polyp be drawn out beyond the anus, either at the examination or when the patients were operated upon, and that he had seen three cases in which polyps protruded from the anus, but rectal prolapse (beyond the anus) was not present in any of them.

All but one of the cases of polyp complicated by prolapse were quite uniform—passage of blood and mucus in stool, occasional bleeding immediately after defecation and prolapse of mucous membrane during or after defecation or enema. The exception was in a boy—four years old—who had had prolapse accompanying bowel movements for about two years—forcible reduction by mother was occasionally necessary—there was never any blood or mucus in the stool; treatment had consisted in strapping the buttocks. Upon examination, August 6, 1913 (Surgical Clinic, Mt. Sinai Hosp. Disp.) a polyp was found attached high up on the lateral wall of the rectum. It was unusually firm and fibrous, and its removal was followed by permanent cure of the prolapse. The prolapse disappeared at varying period after bowel movements; in none of the patients was it permanently beyond the anus; length varied from one to three inches.

Rectal Prolapse: This is so often associated with polyposis of this part of the bowel:

Neuhof⁽⁷⁶⁾ illustrates briefly just what can be anticipated in such a case reporting that about three years previously, a child who had been twice operated upon for rectal prolapse came under his observation; neither operation had any influence upon frequent appearance of mucous and blood in the stools, and the anemia from which the child suffered was very advanced when Neuhof saw her. Upon rectal examination he found a polyp attached by a long pedicle to a point about three inches above the anus. Its removal resulted in permanent relief from the prolapse and the passage of blood and mucus with the stools, and the anemia gradually disappeared. The experience led the writer to investigate the relation between the occasionally encountered rectal polyp and the frequently observed prolapse in childhood.

Adler⁽²⁾ in writing on "polypoid growths in children vs. prolapse" gives a short summary of the subject, his object being to call attention to the fact that polypoid growths in children are of much more frequent occurrence than is generally believed, and to emphasize the point that error of diagnosis are often made in considering such protrusions, when they occur at the anus, as cases of prolapse, which error in diagnosis the author believes is only possible by a failure to make a careful visual and digital examination of the parts concerned. He has seen almost twice as many children affected with a polypus as with a prolapsus, except those instances of prolapse caused by the presence of a polypoid growth, which, by dragging upon the gut-wall, has produced a prolapsed condition of the same.

Intussusception: A polypoid tumor may be the site, as well as the stimulus, for an intussusception. Various authors have referred to this association by reporting cases of children where the direct relation existed.

Coupland⁽¹⁹⁾ describes "a case of intussusception of the ileum into the caecum through the ileocaecal valve associated with

a polypoid tumor. Petrow⁽⁸²⁾ "in this interesting case, the patient presented symptoms of ileus; operation showed ileocecal intussusception apparently due to polypoid growths; at autopsy two additional intussusceptions were found; the intestine was found studded with polypoid growths; the growths showed incipient carcinomatous changes." Kassemeyer⁽⁵⁴⁾ (reviewed by Murphy^{74(a)}), "reports 224 cases of intussusception caused by tumors of which 116 were benign, and of the benign he found polyps and adenomata 73 times." Bratrud⁽¹⁵⁾ writes on "Intestinal polyposis with report of case with three intussusceptions." Beyers⁽⁸⁾ tells of an "intussusception due to polypus of small intestine," in a boy of 5 years, who suffered all of his life from gastro-intestinal attacks. Willis⁽¹⁰⁹⁾ mentions three cases of benign tumors in children—1 fibroma, 2 adenoma of the small intestine—collected in ten years, each in turn responsible for an invagination intussusception. As far as he knows only 17 authenticated cases of adenoma of small intestine associated with intussusception have been reported, addition of his two cases bringing total number to 19, up to that time. From literature he gives the following: King⁽⁵⁸⁾ 2 adenomata accompanied by intussusception Kasemeyer⁽⁵⁴⁾ 10 adenomata complicated by invagination. Scudder⁽⁹⁰⁾ 1 adenomata accompanied by intussusception. Watts⁽¹⁰⁾ 1 adenomata accompanied by recurring intussusception. *Bratrud⁽¹⁵⁾ 1 adenomata accompanied by recurring intussusception. Hartmann⁽⁴⁴⁾ 2 cases; Keilty⁽⁵⁶⁾ 1 case; Ludlow⁽⁶⁷⁾ 1 case.

*With this exception, the age or date of onset, appears later than 15 years.

Barrington-Ward⁽⁵⁾ describes a case of recurrent enteric intussusception due to a simple tumor, in a child of 6 years, with symptoms for three years.

Wardill⁽¹⁰⁶⁾ states that "Lindsay and Perrin⁽⁶³⁾ have adduced evidence to show that the intussusception of infants is associated with inflammation of the lymphoid

tissue in the lower ileum, and they offer this as an explanation of the age incidence. Such an explanation is welcome. Moreover it puts the intussusception of infancy on the same footing as those associated with polypi and growths. If the explanation given by myself of relationship between the polypi and the bowel is accepted it is easy to see the mechanism of production of the ileocecal type of intussusception." Brown⁽¹⁶⁾ brings to our notice an infant of 21 months who had an "invagination ileus in polyposis of small intestine." He says: "... The clinical history outlined in my case portrays two aspects of intussusception concerning which, because of their infrequency, a voluminous literature does not exist. One aspect is that the ileus was caused by a polyp or, more accurately, by a polypoid tumor within the intussusception of the ileum; the other that the recovery of an infant after resection for invagination ileus is a surgical curiosity. . . ."

PROGNOSIS AND TREATMENT.

Under pathology, prognosis is indirectly treated. Usually it is favorable, as the tendency of mucous polypus to become malignant is rather remote. Nature cares for the greater number of pedunculated growths, for by torsion and necrosis of the pedicle, the tumor is released and subsequently passed.

When surgical intervention is indicated, either the snare, simple excision or cautery may be employed. Where the unusual occurs—the sessile type or in instances where the growths are multiple—surgical interference is contraindicated.

CONCLUSIONS.

1. Benign tumors of the small intestines are more common than reports seem to indicate.

2. Intestinal polyposis is often the exciting factor in prolapse of the rectum and in intussusception.

3. The nomenclature of benign tumors needs revision.

4. Another cause for the appearance of blood, in appreciable amounts, in the stools is added.

5. The necessity for the removal of all masses when discovered—as some have a tendency to become malignant.

6. Three cases in children are added to the literature.

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DISCUSSION.

Dr. C. T. Williams (new Orleans): The condition of intestinal polypsis in children is, as Dr. Bloom has brought out, considered a rare condition. Most treatises on the subject merely mention it.

Personally, I have seen a few cases, and I was glad to note that Dr. Bloom brought out the fact that prolapse of the rectum is rather common. In the matter of etiology, trauma, inflammation, irritation and certain other factors like diarrhea, rectal atresia, or strictures of the rectum, these growths usually appear at sites of those conditions.

Dr. Bloom has so thoroughly covered this subject that I really have nothing more to say.

Dr. Cecil Lorio (Baton Rouge, La.): In view of the fact that this subject has been so thoroughly covered by Dr. Bloom, it will be only necessary to recapitulate a few of the symptoms and probable etiological causes of intestinal polyposis in children.

In regard to the etiology, it was once thought, probably 100 years ago, that there was a close simulation between status lymphaticus and intestinal polyposis because they were thought at that time to be an intestinal hyperplasia of the adenomatous tissue in the intestinal tract. It is also thought at the present day by even the clinics of Mayo that it is of the glandular type, a part of hyperplasia from some cause unknown. The status lymphaticus as a cause has practically been eliminated, although there is still some connection.

In regard to the location of the polypus in the intestinal tract, the Mayo Clinic report on adult patients (this may not be relative to the children) a predominance of four to one in the large intestine, but it also does occur in the small intestine, most commonly in the small intestine at the site of the ileum.

In the large intestine, the polypoid growths are located usually within one to two inches of the anus, so that it is usually possible to palpate these growths when they are present.

The symptoms are very few in polypoid conditions, usually bleeding with mucus on palpation. There is sometimes the symptom of tenesmus, but that occurs only in those cases in which the location is so close to the rectum that there is a continual trying to passage, and even after defecation there is the continual tenesmus present because of the presence of the foreign body. The bleeding may sometimes be so severe, as Dr. Bloom has said, as to simulate the cancerous or malignant type, more so, though, in the adult than in the child. In diagnosing polypus about the rectum and the anus, the method of diagnosis is usually that either the mother will tell you that material has passed from the bowel with bleeding, or you can do the proctoscopic or the finger palpation. As I have found in doing the proctoscopic, it is very difficult to make out the presence of a polyp through an infant size proctoscope, no matter how well illuminated, because if it is present it usually fills at the end of the opening of the proctoscope and it all looks about the same. The best idea you can get from it is the presence of the oozing of blood, which may give you some indication.

The finger palpation is the best. First of all, doing a finger palpation with a slight curve to the finger and sweeping around the bowel you will probably, if it is present, hook the polypus on to the finger, and you make a diagnosis that way. Or you may give an enema and try the palpation following the enema. If that doesn't give results, then give the enema, leave the bowel as full as possible, then put the finger in. The polyp will be washed down with the stream of water and you may be able to make a diagnosis.

The treatment, of course, is removal.

Dr. D. N. Silverman (New Orleans): My excuse in discussing this paper is the similarity of childhood to adult life. I don't think we can separate children from adults in polyposis of the intestinal tract. The multiple polypoids are not extremely rare in adults, and they are found in young adults. I have seen them in the teens and in the early twenties. Evidently there has been an establishment of this pathology in many of these cases long before the onset of symptoms. Patients will sometimes come in acutely ill, with apparently an acute abdomen and severe hemorrhage, and examination will reveal a multiple polyposis.

In adults these polypoids become malignant in forty per cent of the cases.

I think there is quite a difference between the single polypoid and the multiple polyposis. It seems to be an entirely different disease, although it is sometimes stated where you see one polypus there are others. But we do know that adults may have symptoms, such as bleeding and abdominal pains, and single polypus will be revealed and removed with good results.

In line with what Dr. Bloom said about familial tendency, I have had occasion to see two similar rectal polypi in two adults of the same family.

Dr. C. W. Duval (New Orleans): There are two points of interest to me in Dr. Bloom's paper which I would like to have him explain. One concerns the fate of the pedunculated intestinal polypi—did these tumors slough off as a result of a twisting of their pedicles, or were they removed at operation? Though Dr. Bloom did not say, I imagine that these growths were passed spontaneously from the bowel. The other point of interest relates to the nature of polypi, whether benign or malignant. Dr. Bloom leaves us with the impression that such growths may

become malignant. In this connection I wish to say that all polypi are benign and in a histological sense never become malignant.

Dr. C. J. Bloom (closing): I appreciate the frankness with which the various doctors have discussed my paper.

In answer to Dr. Duval's question number one, I did say that two of these polypi were passed without any surgical intervention whatsoever. I have slides of two of them in my pocket here that Dr. Lanford made, and the other was brought to me in such a state that I could not have it fixed.

In reply to his second question regarding the pathology, not being a pathologist myself I mentioned as one of my conclusions that it would be a good plan for the pathologists to get together and revise the nomenclature of tumors of the bowel. If the average physician can conclude, from the various articles that I have read, anything that is tangible as to whether these are potentially benign or malignant, he can do a bit more than I have been able to do because I have been going over the literature on this particular subject since last summer. It is the most confusing lot of literature regarding the pathology that I have ever read. It is stated, and I can give the statistics, that these do at times become malignant, and under other pathological headings it is stated that these are benign tumors; so there is something at fault.

I would appreciate it if Dr. Duval would help to do something I have suggested, revise the classification of the nomenclature of these tumors of the intestinal tract.

Dr. Duval: I wanted to know how spontaneous cure took place in the two of the three cases in children. You said they were passed, but you didn't explain.

Dr. Bloom: As both of these children survived, I am at a loss to explain exactly how it took place. I have been able to make conclusions from three cases, that they turn on themselves and twist, become necrotic, and the pedicle separates from the bowel.

Dr. Silverman: I saw an adult where an ulceration dropped off.

JAUNDICE.*

STEWART R. ROBERTS, M. D.

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The bile is a secretion of the liver. To secrete bile is only one of the several functions of the liver "for there is no process within the province of metabolism in which the liver does not intervene." It apparently carries on its several functions at the same time, and so far as is known, in the same cell. One function may cease and others continue.

The average liver weighs fifty ounces and is one-fortieth of the body weight in the male and one-thirty-sixth in the female. This gland, embryologically, is the first to develop; anatomically, the largest to grow in the embryo and in the adult; and histologically, the most difficult to know. It secretes on an average from 500 to 1100 c.c. of bile in the twenty-four hours. Moreover its several activities depend upon a blood supply nearly entirely of venous, non-oxygenated blood from the portal vein flowing in constantly from the tributaries of the stomach, spleen, pancreas and intestines. The amount of arterial oxygenated blood that reaches the liver from the hepatic artery is relatively small as compared with the far larger amount of portal blood. Far less arterial blood, despite its far greater size, is supplied the liver than is sent either to the spleen, the pancreas or the kidney. All this double blood supply is gathered up by the hepatic vein and delivered to the inferior vena cava and, by way of the right heart and the lungs, reaches the systemic circulation.

Clinical medicine has probably overaccented the bile-secreting function of the liver, but the relation of bile to jaundice, the striking tints of yellow and green that color the bile, the gross ease with which a stool can be examined even by a patient for bile, diseases of the bile ducts with white stools and yellow skin, and the glamour of a super-

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stitious therapeutics that surrounds drugs supposed to act upon the liver in producing more green bile, may in some measure account for this. It is very doubtful whether bile would ever have had the importance it has in clinical medicine if it had contained no pigment. This alkaline bile is 97.5 parts water, 0.5 parts pigment and mucin, 1 part bile acids and 1 part fat in the form of cholesterin, lecithin, and soaps—and mere traces of mineral salts in the form of chlorides and phosphates. The three chief solid constituents of bile are the bile pigments, bilirubin and biliverdin; the sodium salts of the bile acids, taurocholic and glycocholic acid; and cholesterin. The latter is of importance as the chief constituent of gall stones. The first two, the pigment and the bile acids, are of importance in jaundice, which can only be understood in terms of the origin, transfer and excretion of the pigments. It is this pigment which gives the lemon-tint delicate jaundice of a pernicious anemia, and, in larger amount in the blood and tissues, the rich yellow of an obstructive jaundice.

The pigment of bile is paint and color, and nothing more. Bilirubin is of a reddish yellow color and is most evident in a semiliquid stool of a brisk purgation. Biliverdin is the pigment of green bile that is so dear to the vision of a bilious patient, and is nothing more than the oxidation product of bilirubin, which in alkaline solutions will oxidize into biliverdin merely on exposure to air, or on exposure to sun light alone. The bile of the carnivora is usually golden from the bilirubin, and the herbivora green from the biliverdin. Both may be present in human bile. The pigments are to be regarded as waste products, excreted by the liver, the result of and an index to the disintegration of the hemoglobin from the destruction of the red corpuscles. They serve no purpose in digestion. Bilirubin is present in the blood in health. The yellow color of the plasma is due to it. It is present in the blood in from one part to a million to one part in 500,000, or from .1 to .25 mg. per 100 c. c., or 1 to 3 mg. per liter of blood.

It is present in the blood in jaundice always in excess and seems to be deposited in the tissues in threshold value of one part in 50,000. There is probably an excess of bilirubin in the blood before jaundice appears, and its deposit in the tissues and excretion in the urine prevents a higher proportion in the blood. Hyperbilirubenemia may exist in cholecystitis, pneumonia, impaired renal function even without hepatic disease, in pregnancy, and in the new born. In obstructive jaundice pigment appears in the urine when the concentration in the blood exceeds one in 50,000, but strange to say, in hemolytic jaundice the concentration may be one in 12,000 and no pigment escape in the urine. This variation in the renal threshold thus far is not explained. In the intestine, bilirubin is acted upon by the putrefactive bacteria and changed into urobilin,—about one-fifth is absorbed, and appears in the urine as urobilogen. There is four times as much in the feces as in the urine.

The source of bile pigment is the hemoglobin of the red blood cells. The estimated life of a red corpuscle is six weeks, so that a continual supply of raw material is available. Hemoglobin is the normal pigment of the red corpuscle and is composed of an albuminous substance called globin, and an iron containing pigment, hematin. The globin is digested and absorbed. The hematin in turn is split into an iron free pigment formerly called hematoiden, but which is really bilirubin, and an iron containing substance, hematoiden, which is stored in the liver, spleen, and bone marrow as raw material to be included again in the new red corpuscles. The hemolytic organs are the liver, spleen, bone marrow, kidneys, and lymph nodes. The worn out corpuscles are taken up by the endothelial cells and other phagocytes of the circulation. A subcutaneous hemorrhage in a white skin shows, in its gradual absorption, the yellow and green colors of the bile pigments. Occasionally in an old thrombus or hemorrhage, the pigment, in the form of crystals

and granules, may remain for years. Virchow, in 1847, showed that bilirubin is found in such old blood extravasations, that its derivation is from the hemoglobin, and that it is, to this extent, certainly formed outside the liver. Rich summarizes these facts, as follows:

- (1) "That hematin and bilirubin are closely related chemically;
- (2) "That hemoglobin spilled into the tissues almost anywhere in the body may be transformed locally into bile pigment; and
- (3) "That the presence of an excess of hemoglobin in the circulation whether introduced in pure form experimentally, or liberated during hemolysis in pathological conditions, is regularly followed by an increased formation of bile pigment."

Mann and his associates by the operation of hepatectomy, or complete removal of the liver, showed that in six hours the animal was jaundiced and proved that the greater portion of bile pigment is formed outside the liver. Bile pigment is of extra-hepatic origin except in exceedingly small amounts that may be gathered by the endothelial, or Kupffer cells of the liver. Contrary to the old conception, the epithelial cell of the liver does not make bile pigment. The old conception assumed incorrectly that obstructive jaundice was due to the accumulation of bile pigment in the liver cell, and if the outflow of bile was prevented, the bile was reabsorbed through the blood and lymph until jaundice resulted. The present conception assumes that the pigment is made outside the liver and is simply excreted by the liver cell. The liver cells have the power to take up bilirubin easily from the blood and excrete it, except when they are injured as in pneumonia. Obstructive jaundice prevents the excretion of the pigment by the liver cell, and the reabsorbed pigment in the blood has already been through the liver cells. It is to be remem-

bered that bile pigment is soluble in an alkaline watery medium. As it increases it permeates the tissues rather than stains them except in the case of the connective tissues. After death it may stain all the tissues. The greenish hue in long standing jaundice is probably due to the oxidation with change to green of the bilirubin. If there is damage to the liver cells, as in typhoid or in arsphenamine poisoning, the liver cells become relatively incapable of transferring the pigment from the blood to the bile in the bile capillary. Differing from obstructive jaundice, the bile pigment does not get through the liver cell in normal amounts.

With the site of the formation of bile pigment definitely fixed in the bone marrow, with hemoglobin proved to be the source of bile pigment, with the blood stream as transfer agent to the liver and the liver cell, and the latter as the removing agent from the blood and the excreting agent to the bile, a more correct classification of jaundice became possible. The yellow skin, the white stool, and the dark urine are gross proofs of jaundice. With the discovery by Van den Bergh, the physiologist of Holland, that the diazo reagent formerly used by Ehrlich as a test for typhoid fever, reacted with characteristic colors in solutions of bile pigment, a quantitative and qualitative test is of value in a classification of jaundice, and directly related to clinical conditions. The test applies only to bilirubin and not to biliverdin. It is qualitative in that it determines whether the pigment is of type 1, in excess on account of obstruction and has been through the liver cell and hence modified in some way, or type 2 and not modified. It is quantitative in that it determines the exact amount of pigment per 100 c. c. of blood. A Van den Bergh unit is one part of bilirubin in 200,000 parts of blood. The icterus index is a much simpler test, quantitative only, which by color comparison, gives a rough estimate of the amount of pigment present or the degree of jaundice. The normal icterus index is between four

and six comparative color units; in latent jaundice, which is an excess of pigment in the blood without jaundice, it is between 6 and 15; and above 15, jaundice is evident, clinically.

The bile acids are present in the bile as the sodium salts. They hold the cholesterol and lecithin of the bile in solution and seem to assist in the emulsification of fats. The origin of the bile acids is not definitely known, but the weight of evidence points to the liver cell as the producing agent. Their physiology is certainly lacking. Aldrich at the Mayo Clinic has so standardized the old Pettenkofer reaction for bile acids that Rowntree now considers it simple and clinically applicable. It will probably come into clinical use. Bile acids seem increased on a meat diet and decreased on a sugar diet, and are continually excreted in the bile and reabsorbed from the intestine, the so-called "circulation" of the bile acids, and, taken by mouth they are promptly eliminated in the bile in six hours. Cholic acid is all important for their formation, but nothing is known of its formation. Bile acids seem continually formed in the body. They are the only active cholagogues and on injection, increase the quantity of bile without an increase in the concentration of the bile salts. The cholagogue action of any claimed cholagogue "fades by comparison with the action caused promptly by bile salts."

Bile acids were formerly supposed to cause the pruritus and bradycardia of jaundice, but Rowntree and his school have evidence against this, and have proved that they may be increased in the absence of jaundice. In obstructive jaundice acids accumulate very rapidly in the blood, often five times above normal, and this increase is associated with bilirubin concentration and dye retention. Bile acid content fluctuates but returns to normal ahead of the bilirubin or the dye. Obstructive jaundice alone seems to show this increase in bile acids. The weakness, prostration, stupor

and coma of hepatic dysfunction has been related to the bile salts.

The following classification harmonizes both with clinical experience and our present knowledge of the physiology of the liver and bile pigment:

(1) Obstructive hepatic jaundice, with the causes divided among:

(a) Changes within the ducts, as stone, mucus, parasites;

(b) Pressure from without, as new growths, nodes and adhesions;

(c) Stricture, kinking or twisting of the duct. The icterus index is usually above 15 and the Van den Bergh is immediate direct. The bilirubin may react as high as 50 units. Four units are present before the pigment appears in the urine. Bile acids in the beginning are in excess, but their production soon ceases, though the bilirubin continues to be formed, accumulates in the blood and is excreted in the urine. Dye retention is increased and the fragility of the red corpuscles shows increased resistance to hemolysis. The cholesterol content is increased. The urine is acid, decreased in amount, bile stained before the skin, yellow to olive to brown to black, and may contain albumen, casts, and excessive indican. The specific gravity of the blood is increased and the bleeding and coagulation times are usually prolonged due to a reduction of calcium in the blood.

Artificial light rarely reveals jaundice. Pain may be present or absent. There seems to be no proved causal relation between excess bile salts and itching. The leukocyte count is not increased by jaundice alone, though if prolonged the red corpuscles may be reduced. The sweat may be stained, but the tears, saliva, milk and cerebro-spinal fluid usually escape. The pulse may rarely be slow, but not so usually as was formerly taught. The liver is usually enlarged due to distension of the bile ducts, and the lower border may be one or two finger breadths below the costal margin. It

is a passive congestion due to bile instead of blood as in the larger liver of heart failure. Constipation and flatulence are the rule. The stools are white from the absence of bile and the excess of undigested fats. Headache, drowsiness, and weakness may increase to delirium and stupor. Cholemia, hepatic insufficiency, or liver failure are terms used to describe this usual terminal state.

(2) Toxic and infective hepatic jaundice is the symptom of some condition or disease which has damaged the liver cells in variable mass and degree. The damage varies from a little cloudy swelling to fatty change to necrosis. It occurs in pneumonia, yellow fever, septicemia, peritonitis, syphilis, infectious or epidemic jaundice, in chronic heart disease, in mushroom, chloroform, phosphorus, and arsphenamine poisoning, in acute yellow necrosis, and in jaundice of the new born. It is probably the most common type of jaundice.

The liver cells are poisoned, histologically changed, and their normal function so altered that they are relatively incapable of removing bilirubin from the blood and excreting it into the bile capillary. The bilirubin does not go through the liver cell in normal amount. It consequently accumulates in the blood, and stains the tissue. It is a true liver jaundice as distinguished from an obstructive jaundice. The icterus index is increased. The Van den Bergh reaction is indirect and present only with the addition of alcohol to the test blood serum. An obstructive element may also be present in the liver, from an inflammation of the bile ducts, and the so-called biphasic reaction may occur—a prompt reaction, from the bilirubin in the blood due to the obstruction, but the bilirubin, accumulated in the blood from liver damage, *i. e.*, bilirubin that has not gone through the liver cell, may give a delayed direct reaction.

The degree of jaundice is not related to the severity of the general condition. The jaundice may be slight and the liver damage

severe. The bilirubin in blood and urine is usually less than in obstructive jaundice. As a rule, bile continues to reach the intestine so that the stool is not white and fat is digested. However, the clinician may know from the appearance of the jaundice, proved by proper study, that a degree of liver damage has occurred. The strength of the patient should be conserved and severe purgation avoided.

(3) Hemolytic jaundice is a condition in which bilirubin is formed faster and in larger amount than the liver cells can take it from the blood and excrete it into the bile. Abundant pigment may be present in the blood and none in the urine. There is no obstruction in the biliary tract. It is a true blood jaundice. The bilirubin is from extra-hepatic sources. Blood destruction and bilirubin production is in excess and the condition of hyperbilirubinemia is present. There are two chief varieties:

(a) Primary hemolytic jaundice, as illustrated by familial jaundice, whose chief qualities are its chronicity, the increased destruction and fragility of red corpuscles, the absence of retained bile salts, the so-called acholuric jaundice, and splenomegaly. It is cured by splenectomy.

(b) Secondary hemolytic jaundice, as illustrated by pernicious anemia, and transfusion hemolysis because of blood from an unsuitable donor; starvation jaundice; and malaria. The icterus in pernicious anemia averages 10, and in secondary anemia only 3.3, which is evidence of the hemolytic nature of the former, and its absence in the latter.

In any classification of jaundice there will be much overlapping. The evidence separating one type from another is not so sharp in the patient as in a table. Nature is not nearly so schematic as we are and arbitrary divisions often become more vague at the bedside. The newer conceptions of the functions of the liver, the origin of bilirubin and the mechanism of

jaundice are relatively recent and leave many facts to be desired. However, a great advance has been made over the old knowledge of clinical jaundice, for there is much more to be learned about the condition than we thought. A case of jaundice is now a patient to be studied. In addition to the methods of clinical medicine, the contributions of the laboratory permit accurate study and accurate conclusions, where formerly either clinical patience on the one hand or a diagnostic operation on the other, were our limitations of service. And even so simple a test as the icterus index is valuable in conditions other than jaundice.

It is perhaps profitable to outline the steps to be taken in the study of a case of jaundice, particularly when the nature of the jaundice is in doubt and the plan of treatment undecided. All of these are not necessary in every case and rarely all in any case, but from them one may choose within the limits of his needs and opportunities what should be done to reveal the cause and nature of the icterus. With experience the liver will become more familiar clinical ground because the laboratory affords facts that permit clinical conclusions. Jaundice, even though it may be a condition or just a symptom, is a sign to be explained, and that without loss of time.

(1) To develop a liver mind and to consider jaundice a condition that invites investigation and interpretation. There is much more to jaundice than a yellow skin.

(2) To think in terms of the classification and causes of jaundice—obstructive, toxic, hemolytic.

(3) To think in terms of the cause of jaundice in any given patient.

(4) To plan the management and treatment on the basis of the pathology.

(5) To realize that cases of obstructive jaundice are chiefly surgical after medical study, and that toxic and hemolytic types are usually not surgical—with rare excep-

tions—as splenectomy in Banti's disease and acholuric jaundice.

(6) To examine the abdomen carefully and outline the borders of the liver, and to watch for changes in the size of the liver.

(7) To determine whether jaundice is acute or chronic, epidemic or non-epidemic, painful or painless, familial or individual, with or without fever, with or without leukocytosis, with or without bile in stool and urine, with or without anemia.

(8) To use the icterus index, the Van den Bergh, the dye retention, the fragility of the erythrocytes, the coagulation time of the blood, as necessity demands and opportunity permits. The test for bile salts in both blood and urine will probably be increasingly used.

(9) Operation in obstructive jaundice is inadvisable with a coagulation time longer than 9 minutes. Preparation with intravenous calcium, glucose, and in extreme cases, transfusion have reduced the mortality from 9 to 3.5 per cent.

(10) The passage of the duodenal tube reveals definitely whether or not any bile is reaching the intestine.

(11) Purpura and blood extravasations prove disturbed coagulation time and injury to the capillary wall.

DISCUSSION.

Dr. S. Chaillé Jamison (New Orleans): It would be impossible to discuss such a masterpiece as Dr. Roberts has just presented. I may, however, attempt to accentuate a few points that he has brought out.

First, in considering icterus, I should like to draw your particular attention to the icterus index. This gives us a knowledge that the patient is jaundiced before we can possibly see it. That is, the icterus index is not present in jaundice until it has gotten to at least what is called fifteen units. There is that distance, then, between the normal and the actual appearance of jaundice, the difference between six and fifteen. For instance, we may have an icterus index of ten which we are unable to detect, yet which has the significance the jaundice would have.

Let me point out again, please, the importance of the proved fact and the newer conception of bilirubin. Bilirubin is a product made from the red blood corpuscles by the cells of the reticulo-endothelial system. This system breaks up the red blood corpuscles, or uses the red blood corpuscles in such a manner that the bilirubin is removed. The bilirubin is then carried by the blood to the liver. You will notice that the liver itself has nothing whatever to do with this formation of bilirubin except in so far as the liver contains a certain number of the so-called Kupffer cells which are a part of the reticulo-endothelial system.

Dr. Roberts' classification, then, helps us enormously in the understanding of jaundice. We have, first of all, the obstructive jaundice which, as he said, was purely a tubular jaundice. We have next the toxic jaundice which is indicated to us by the accumulation of bilirubin in the blood. This accumulation, however, is not necessarily due to any increase in the destruction of red blood corpuscles or increase in the bilirubin, but is merely due to the fact that the liver cells are unable to pass it through. That is all. It is an indication, then, of the extent of poisoning of the liver cells.

Finally, we have a hemolytic jaundice which is due to a great destruction of red blood corpuscles, and therefore a great formation of bilirubin in excess of that amount which the normal liver cell can excrete. It therefore accumulates in the blood.

Theoretically, then, with the aid of the Van den Bergh reaction we should be able to say exactly whether the obstruction is in the bile ducts, whether it is due to poisoning of the cells, or whether it is due to an overproduction of bilirubin. This is true in a certain number of cases. Unfortunately, there is a considerable amount of overlapping, and the Van den Bergh reaction, in spite of its very great value and very great help, does not entirely solve the problem.

Dr. J. Holmes Smith (New Orleans): Any remarks which I have to make will be based largely upon the clinical side rather than upon the laboratory side.

It has been my pleasure in the last few years to work in two large clinics of the Charity Hospital, one of them devoted entirely to the colored, and the other to the white.

I have been impressed with several facts: First, the prevalence of jaundice in the negro. While I have no statistics upon which to base any statements, I believe that it has been more prevalent amongst the colored patients presenting themselves than amongst the whites, some of the patients in the Out-Patient Department having jaundice as

the only symptom and no other clinical sign. They may come into the clinic intensely jaundiced, no nausea, no vomiting, no tenderness over the liver, and after the most elaborate examination, laboratory tests, and so forth, we are no further along than we were in the beginning and the patient proceeds to get well. We don't know what the cause of the jaundice might be.

I have been extremely interested in the Van den Bergh test, in the icterus index, and other tests of liver function. Personally, I am inclined to think that the Van den Bergh test is the most reliable because it represents a definite chemical reaction and is not based solely upon color change.

Endeavoring to follow the icterus index on certain patients, I began collecting blood in an effort to study slight jaundice and latent jaundice, and I was very much surprised, on a number of cases, to find individuals who had no jaundice at all but the icterus index would be around 25, 30 or 40. I then learned that it was probably due to some error in technic, such as enough water in the syringe to cause hemolysis. My reason for bringing that up is this: We send our patients to the laboratory. Frequently the syringe is withdrawn direct from a sterilizer, and when the blood withdrawn, water is present and causes hemolysis and anspicterus index.

I am not wishing to decry the value of the icterus index. I think it is very important, but what I wish to emphasize is the necessity of due care in the technic.

Another thing with regard to the prevalence of jaundice in the colored race is the possibility of syphilis as an etiological factor in many of these individuals. I have found jaundice present in about five patients presenting a positive Wassermann out of many, many hundreds who have had the Wassermann and large numbers who have had jaundice. I do not think the jaundice accentuates the Wassermann at all. If anything, possibly from the presence of cholesterol, it tends to make an otherwise positive test negative. I am wondering whether or not quite a few of our cases of jaundice in the negro are not due to syphilis even though we may have proof of it.

Dr. J. Birney Guthrie (New Orleans): We have listened to a very important paper. We have listened to a most beautiful statement of a classification of jaundice that is accepted the world over today. It is, I believe, the classification of McNee and has been accepted by the medical world.

We have heard from Dr. Roberts the necessity for modifying our ideas of jaundice. As he says, we have to become truly liver-minded, and when we become liver-minded we become reticulo-endothelial-minded by the same token.

It is a little startling, when we consider the subject of the serological reactions in a disease like typhoid fever, to learn we are dealing with a disease that constantly and practically always is accompanied by jaundice. If we heard the same thing said about malaria, we would say we knew that always. There hardly was a time when we studied anything medical that we didn't know that with malaria. We expected that, but do we expect it with typhoid fever? Did we know about it as regards half a dozen other diseases? We know yellow fever is a jaundice disease; we can see that; it is yellow. There is a progressiveness and a severity of jaundice that could not possibly escape observation, but here we have in these delicate reactions, the Van den Bergh on the one hand with the observation of the Ehrlich test, and the icterus index, by which we have a means of arriving at the status. Even though they don't satisfy our entire needs, these two tests have made us, as the doctor says, liver-minded. We are now keen to find out what is going on in this great collection of cells, the reticulo-endothelial system, what goes on in the liver, and what goes on as regards the retention of bile pigment in the blood is a very prominent indication thereof.

I can't do more than urge the acceptance of this classification. It isn't just an accidental thing. It isn't a thing that Dr. Roberts has worked out over there and comes here to try on us. It is an accepted, classical view of jaundice. If we don't accept it, we will simply have to take a back seat as regards the clarification of our ideas on the subject of jaundice.

Dr. Stewart R. Roberts (closing): I thank Dr. Knighton for his suggestion, but I had finished the paper. I haven't finished the subject because it is so profound that I doubt if any of us have really yet begun to study it.

Osler said if a practitioner did not continue to study five years after his graduation he would know less than he did when he graduated. I think that is particularly true today of the medical graduates from such schools as Tulane and other Class A schools in the country, who are the best trained men in medicine that the world has ever seen. I am sure if one of us doesn't study a subject in medicine or surgery for five years it will long ago have made such progress that he will be

relatively ignorant. I have waked up to feel that that is somewhat our condition as regards the liver.

To quote a phrase in the paper that my friend used here, "We are not liver-minded," we have dismissed yellow jaundice as we have mumps, more or less, with a smile.

I don't know but that Dr. Smith is right. In my experience, jaundice is more frequent in the negro than in the white. I have felt that gall-stone colic was not as frequent in the negro as it was in the white, and certainly the negro did not seem to suffer as much with gall-stones as did the white. Whether that is a fact or an impression, I do not know, but racial relations to pain are very interesting. A friend of mine has just made the statement, after five years in China, that the Chinese do not suffer with angina pectoris.

The surgeon has been so interested in the gall-bladder, either getting its contents out, or it out, that he has neglected the liver; and the internist and the general practitioner have been so interested in passing to the next patient and studying the liver, or neglecting the liver, that they have not thought very much in terms of gall-bladder pathology.

The lesson to me in this matter is plain, that we must think in terms of liver pathology. If one will get the last edition of Bass and Johns' Laboratory Manual, or Todd and Sanford's Laboratory Manual, and look up some of these new tests and do them a few times himself, particularly the icterus index test, he will awaken very personally to the value of the new work that has been done. The leaders in the work have been McNee and Rolleston in England, Whipple in New York, and the Mayo Clinic as previously stated.

I am constrained to believe that there is more jaundice than we realize; that we have looked upon jaundice as a thing to come in with a great yellow color. But there are all degrees of jaundice just as there are all degrees of insanity.

Since we have been studying the question of jaundice, we have found many more cases in our practice than we had heretofore suspected. We must realize, too, that jaundice of itself does not constitute a disease, but mere a sign and a symptom that calls for diagnostic study and some intellectual activity.

THE MANAGEMENT OF PNEUMONIAS IN INFANTS AND CHILDREN IN THE AVERAGE HOME*

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We have learned to prevent, to a great extent, the diarrheal diseases of infants and children, which until a few years ago was our greatest problem. Now, the greatest problem is that of acute diseases of the respiratory tract. The mortality of infants and children a few years ago was in the summer months. Now, the winter and spring months are the leaders. The Chicago Pneumonia Commission found that, in children under five years of age, respiratory diseases with their complications, as otitis media, mastoiditis, empyema and other frequent complications required a great deal of attention to reduce the mortality. Out of six thousand cases of pneumonia studied, fully one-third occurred under five years of age. There are, as we all know, two main forms, (1) bronchopneumonia, (2) croupous or lobar pneumonia, not forgetting (3) chronic interstitial pneumonia and (4) hypostatic pneumonia. Although we make the two main classifications, there is no doubt we have, more often than thought, a combination of the two. This has been proven at autopsy. In studying the analysed cases, we see bronchopneumonia the leader in the first two or three years of life. Seventy-five per cent of the cases occurring before two years of age, being bronchopneumonia, and most frequently in delicate infants. After three or four years of age, the primary form is seldom seen. The secondary form is especially prone to follow in the wake of such diseases as influenza, measles, whooping cough, or any other upper respiratory infection; not forgetting typhoid fever, rickets, syphilis and gastro-enteritis.

The infecting germ is mostly the pneumococcus of Frankel in primary cases, while in secondary forms the streptococcus, staphylococcus or pneumococcus is most common. However, the colon bacillus, *Micrococcus catarrhalis*, diphtheria bacillus, or typhoid bacillus may be the cause. The tubercle bacillus is usually in combination with some or all of the others.

Pathologically, the whole respiratory tract is usually involved, extending from nasal passages to the bronchopulmonary tissue. There is first an involvement of the mucous membranes, then the deeper tissue, and no doubt, if we could see all along the bronchial tree, we would find swelling, exudations, distortions, atelectasis, as well as bronchiectasis and spasms of the bronchioles, due to the irritation of the respiratory nervous system.

As a rule, the onset of bronchopneumonia is gradual and usually preceded by some slight upper respiratory infection. When first seen, the baby may not look very sick, but in a short time the whole picture changes to one of a very sick baby. The cough becomes more harassing with or without a great amount of bronchial secretions. This is either swallowed or brought up with such little force as to allow it to fall back along the bronchi. We must not look too lightly on bronchopneumonia. It is very serious from the start, and requires careful watching and treating from the very beginning. Remember that respiratory failure is usually the cause of death in this type of pneumonia.

It is not always easy to make a diagnosis of bronchopneumonia in an infant, as the findings vary with the extent of involvement of the broncho-pulmonary system, the size of bronchi affected, the location with reference to the surface of the chest and the swelling and spasm of the bronchi. As a matter of fact, these findings may not differ from an ordinary bronchitis. If your little patient looks very ill and the temperature is running

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too high for ordinary bronchitis, I think we are safe in making a diagnosis of bronchopneumonia. The severe types of bronchopneumonia should not give us any trouble in making a diagnosis. The objective symptoms alone, as the general expression of the child, high fever, panting respirations, cough, cyanosis, crepitant and subcrepitant rales, especially when localized, even without consolidation, should make the diagnosis positive. Your white blood cell count, when possible to make, should be of great help to you. The total white cells are always much higher than in bronchitic, 25,000 to 45,000 in bronchopneumonia.

During the course of the disease we must be on our guard for one or all of the most common complications; as empyema, middle-ear infection, pyelitis, nephritis, gastro-enteritis, pericarditis, pulmonary abscess and meningitis. If, during the course, the temperature has subsided for a day or two and then suddenly rises, or even during the ordinary course you have a sudden, sustained rise of fever with an increase of the toxic symptoms, you had better look for one of the complications mentioned. Of course, we do have, at times, uncomplicated relapses or recurrences, but so rare we had best search for a complication. A low temperature is usually an unfavorable sign.

In treating bronchopneumonia, the essential point is prevention. Every child with measles, whooping cough, influenza, bronchitis, rhinitis, laryngitis, tonsillitis; in fact any child with any severe upper-respiratory infection, should be handled as a potential, first-stage bronchopneumonia. Every child with any of these infections should be kept in bed and treated as if they had a bronchopneumonia. This alone, I believe, is our greatest mode of prevention and reduces the morbidity more than any one thing. We all know how hard this is to carry out in the average home. The general care of your patient, after your diagnosis of broncho-

pneumonia is made, is not to be limited to treating the disease. We must treat the child and parents as well. Keep a careful watch on the toilet of the mouth, nose, skin, kidneys and bowels. The condition of the mouth is one of the best guides, not only of your successful treatment, but of your nursing. There is no disease where nursing plays a more important part than in bronchopneumonia. Do not exhaust the patient by too much attention. The food should be given a great deal of thought. I find a high carbohydrate diet, such as cereal gruel, with boiled skimmed milk, cooked fruits, and an abundance of fruit juices most satisfactory. The citrus fruit juice serves you well in combating your acidosis. Judgment is always to be used in feeding these cases; the age of the child as well as its digestion being your guide. Keep your patient in a quiet room and, above all things, free from crowds and too many would-be nurses and solicitous relatives. The air should be fresh, moist and warm, with all the sunshine possible. Do not forget that these little patients are just as susceptible to nerve-disturbing elements as any of your adult patients.

There is much for the physician to do, and still more for him to see that is not done. He must have 100 per cent cooperation. Most of us are in accord on the subject of the application of counter-irritants to the chest in broncho-pulmonary infections. I sometimes use a weak mustard plaster in the very beginning, but wonder if the results are not based more on tradition than on scientific reasoning. I never insist on any of this treatment; on the other hand, condemn it if it is the least bit disturbing to the patient. Cupping is used by some good men. I have tried it, but always felt that I had done more harm than good, as it frightens the child, irritates the skin and has neither direct nor reflex beneficial action. The greatest place for using your diplomacy, and doing a great good thereby, is when you can successfully stop or prevent the application

of the different medicated oils; as camphorated oil, mustard oil, turpentine, kerosene, mutton suet, peach-tree poultices, saying nothing of the propriety preparations. We should all be diplomatis enough to stop them. What could be more nauseatingly disgusting to any of you than to have an inflammatory condition of your pulmonary mucous membranes and then have to breathe the obnoxious fumes from these concoctions? The real object of our treatment is to keep our patients comfortable, in an atmosphere of warm, fresh, soothing air, and not have him bathed in an ill-smelling, pungent, nauseating air, coming from his own body, irritating more and more the delicate, inflamed mucous membranes of the respiratory tract. Before any of you again use any heavy application to the chest of these little fellows, (such as the medicated muds), you should recall the laws of physics and figure the number of hundred pounds being handled by the chest muscles in these fellows in the course of twenty-four hours. When we have a diffuse bronchopneumonic process, with poor peripheral circulation, a weak mustard plaster or mustard mixed flax-seed meal made into a paste and applied warm all around the chest may do some good. In the milder cases, the only application needed is a good, soft, snug fitting, woolen shirt, which can be easily and frequently changed, as well as allowing us free access to the chest with least disturbance to the patient.

Many of us are too prone to make too many and frequent examinations. It does no good, and frequently does great harm. Most of these little fellows are very excitable and nervous. These frequent examinations will only exert them and put an extra burden on the already over-burdened heart. The temperature in bronchopneumonia, being of a remittent, vascillating type, hyper-pyrexia rarely requires but little hydro-therapeutic attention. This is in contrast to the fever of lobar pneumonia. These little

fellows being so easily disturbed, I feel the only thing necessary is our routine daily bath with tepid water. In the severe cases, a warm, diluted alcohol sponging may reduce the temperature and allay the restlessness. Where this fails to control this condition, and you have a vigorous, robust child, the application of compresses to the chest, made by dipping several layers of soft linen into cold water and applying snugly to the chest, covering with a layer of flannel, apparently does good, if changed every hour or two. Watch the bowel elimination. See that we have at least one good movement every twenty-four hours. Frequent bowel irrigation as a routine are to be condemned. I see no need or indication for it. If one good movement a day, do nothing. Calomel, followed by oil should have no place here. To keep up a good water balance to flush the system and dilute the toxins, if such be possible. The nurse if properly impressed with the importance of fluids, can usually give enough by mouth. Milk of magnesia or an enema will usually be all that is needed for the bowels, and will disturb your patient very little. Drastic purgatives deplete the child and add additional hazards. When we have a dry, harassing cough from laryngitis and tracheitis, medicated steam inhalations, if properly administered will give you much relief. When using, guard against overheating or burning your patient.

When our little patients are extremely toxic, restless and becoming dehydrated, and we are unable to get them to take enough fluids per mouth or by proctoclysis, do not wait too long to give your fluids by other means. Glucose and salt solution, either by hypodermoclysis or into the peritoneal cavity, if you are sure it will not embarrass respiration, is the best method. Be careful not to over-do this, as you might get an excess of fluids, thereby bringing an extra burden on the already over-burdened heart. When we have a hyperpyrexia—105° to 106° F.,

the baby very restless and unable to be controlled by sponging, we are possibly justified in giving one or two doses of aspirin or phenacetine, this rarely ever to be repeated. This may temporarily reduce the temperature, but there is most always a reaction with a higher temperature and general depression.

Very few, if any drugs are necessary in treating the ordinary case of bronchopneumonia in early life. In mild cases, potassium or sodium citrate with paregoric or Dover's powders in proper doses and at the proper time is all that is necessary. In the severe types, atropin, alcohol, digitalis, codein and nitroglycerin are the essential drugs, of course, only to be used when indicated. Atropin stimulates the respiratory system, dries up excessive secretions and relaxes bronchial spasm. In small doses it does not paralyze the vagus, but acts as a vagus stimulant, causing a slowing and strengthening of the heart. Digitalis supports the cardio-vascular system. Codein quiets your patient, allays the cough and restlessness, eases pain, diminishes bronchial secretions, as well as being one if not our best heart stimulant to an over-worked heart. Alcohol is always valuable, the dose to be regulated by the age and condition of the patient. Nitroglycerine may be tried in 1/200 gr. doses where the heart is extremely overburdened. There is no place for these harmful, nauseating, so-called cough mixtures. The main object of this paper is to plead with you for less drugging. The good from the use of oxygen inhalations is yet questionable. Personally, I have met with disappointment in all cases where I thought oxygen indicated. Where we have a well-ventilated room with a constant current of fresh air, we should have enough oxygen, if oxygen be all that is necessary. Vaccines are only mentioned to be condemned. We are living in great hopes that a specific antibacterial serum, such as one being worked out by Parks,

Bullowa, Rosenbluth and Cecil will give us great aid, if not a specific, for pneumonia.

Blood transfusions, in many of our severe cases, should be life-savers. Since the report of 273 successful intraperitoneal blood transfusions by Cole and Montgomery of Detroit, I feel we are justifiable in doing this much oftener than heretofore. It is so simple that it can be done in the average home. However, the ideal place would be in the hospital. I have had most gratifying results in the several cases I have transfused by this method during the past year.

The complications such as bronchiectasis, empyema, lung abscess and gangrene are the most important, and should be handled by the surgeon. The delayed resolution cases that terminate in fibrosis or tuberculosis should be kept quiet and in open country with plenty of nourishing food, cod-liver oil and tonics.

LOBAR PNEUMONIA.

Lobar pneumonia is a general infection, the main pathology being an inflammatory process of the lungs. Death is usually due to cardiac failure. The onset in lobar pneumonia is more sudden, with a shorter course and more rapid termination. The disease is caused by the same organisms as bronchopneumonia. It is more common in healthy, robust children than in weak, delicate children. The diagnosis is easier to make by the sudden onset of high fever, restlessness, rapid breathing, painful, pleuritic cough, etc. The physical signs may be very misleading, as they show great variations as to time of appearance, (early or late). The symptoms and physical signs may not correspond at all, and if we are not very careful we will be embarrassed by making a diagnosis of pneumonia where none exists. It is best to hold your opinion in reserve until your physical signs are frank. In treating lobar pneumonia, absolute confinement to bed is essential, for as a rule we are deal-

ing with children who have assumed the upright position in contradistinction to those of broncho-or hypostatic-pneumonia. Allow your patient to sit up as little as possible, avoiding all unnecessary movements; let him alone, undisturbed, except for feeding and the necessary hygienic care. It is a self-limited disease. Rigid hygienic care of mouth and skin is very necessary. Do not upset the stomach with drugs just because you have a case of pneumonia. We usually have anorexia, and where this exists the diet may consist entirely of fluids, as water, fruit juices, sugar, milk diluted with weak tea or coffee, thin broths with well-cooked cereals. Just because you have pneumonia you do not have to give digitalis. Wait for cardiac needs before resorting to digitalis or other cardiac stimulants.

The other lines of treatment are about the same as for bronchopneumonia; mild cases, no drugs; moderately severe cases, symptomatic and maybe small doses of digitalis; severe cases to be treated vigorously with heart stimulants, digitalis, caffeine, adrenalin, and alcohol; small doses of quinin and guaiacol may serve you well at times. Type I and Type IV serum may be given with beneficial results if given in first forty-eight hours of disease; later, we are unable to see where it is of any benefit. Last, but most important, especially in anemic children, blood transfusions not only improve your anemia, but in some cases cures the infection in a manner similar to a crisis. This, of course, is not urged except in very anemic infants and young children.

We are not ready to accept the wonderful results reported for intravenous injections of mercurochrome, chicken blood, or diathermia.

THE TREATMENT OF PRIMARY AND SECONDARY PNEUMONIA.*

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It should be our aim as physicians to prevent as well as cure all ills.

We are hoping that vaccines as prophylaxis, and serums as specific, will do for pneumonia what has been accomplished in eradicating small-pox, diphtheria, and typhoid fever.

Some are advocating the use of vaccines, and reporting good results, producing statistics that are very convincing, but until we know more of the susceptibility of each individual and can better judge the reaction, and also know the duration of the immunity, its general use will be condemned. Some excellent reports have been made on the use of anti-pneumococcic serum, type I, as to its specific action.

About two-thirds of all cases typed are I and II, and type I somewhat more frequent than the latter. Statistics also show that type I serum is of very little value in treating type II pneumonia, and none in three and four.

Can we have a method of treatment which is specific for all pneumonia, one that will cut short the length of our patient's sickness, and will give him a better chance of living?

In pneumonia we are confronted with this fact, that we are dealing with a different type from one year to another, and from one section or locality to the other. The rate of mortality is also changing with or without the type. This is not only true with primary, but also secondary pneumonia. We have witnessed this past season an alarming death rate in influenzal pneumonia in the aged, whereas a few years

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ago the greater number of deaths occurred in young adults. In other years we find more cases in children. If the general practitioner had an easier way of diagnosing these different types of pneumonia, we would have a greater number treated with anti-pneumococcic serum, antibody solution, or pneumonia antigen.

Many glowing reports and statistics galore, proving the advocates' line of treatment has lowered the death rate, but the deaths recorded continue too great for modern medicine. We need statistical and laboratory data that is practical and producing more uniform results.

Having no specific or routine treatment for either primary or secondary pneumonia, our efforts are palliative. We should place our patient in a well ventilated room with a uniform temperature, and under the care of an efficient nurse. Many drugs and methods of management are used, but I shall confine my paper to the most important.

In most cases an initial dose of calomel followed by a saline is best, after this magnesia and castor oil as needed.

Counter-irritation with a mustard jacket, or some form of mustard paste, this to be repeated every three hours, care being used to cause no blister or unnecessary disturbance. This counter-irritation will often times relieve a disturbing pain.

Diathermy is used by some, the sedative method in which the current is turned on slowly and run up to 2000 milliamperes. The technic requires training and is accessible to a limited number.

Mercurochrome is being given with good results, administered intravenously to adults and intraperitoneally to children. The difficulties some times encountered in its administration, and the danger of mercurial poisoning prevents its general use.

High temperature should be treated with ice pack and acetyl salicylic acid, the latter given cautiously and in the first stages.

Codeine will relieve pain and cough better than anything I have ever used.

Diet is an important factor in combating the effects of pneumonia; this should be nutritious and easily digested. I find nothing better than buttermilk, fruit juices, cereals, cooked fruits, and toasted bread. I instruct that patient be fed every three hours when practical.

If we are to carry our fight to a successful conclusion, stimulating and supportive treatment must begin early. I have used all of the following drugs: strychnin, digitalis, atropin, camphor, and caffeine.

I prefer strychnin, which is always safe and dependable. Digitalis has and will save the life of many; begin early for it will do no good after the heart has failed, which is usually due to acute dilatation.

I consider these four points of most value: elimination with water and magnesia; rest by giving sufficient doses of codin; strychnin and digitalis as stimulants; with judicious feedings.

DANGER SIGNALS.

Dyspnea, a sudden drop in blood pressure, pulse rate of 130 or above, cyanosis and acidosis.

DON'TS.

Don't give quinin unless you have positive malaria, drastic purgatives, wet applications or poultices, too much company, over-heated and poorly-ventilated rooms, and never subject influenzal pneumonia to air currents.

DISCUSSION OF PAPERS OF DR. RILEY AND DR. LITTLE.

Dr. T. D. Bourdeaux (Meridian): Dr. Riley has written such a good paper that he hasn't left very much room for discussion. I had the privilege of reading his paper before it was read before you and I am so heartily in accord with almost everything that he has said that I won't be able to get up much argument with him. I think the most I can do is to try to emphasize one or two points in this paper.

I might say the theme of this paper was confined to the treatment of children and infants in the home and not in a well-appointed hospital.

Inasmuch as pneumonia, as we all know, is a self-limited disease and we haven't any specific treatment yet, we have to confine ourselves to treating the patient and letting the disease alone largely. The question arises: "What can we do for these little fellows, assuming that we have diagnosed it correctly, with pneumonia?"

Of course, the placement of the patient is important. We all like to have a patient in a well-ventilated, warm room, with plenty of moist air and a good nurse. When we have done that we have gone a long way toward giving the child the best opportunity it will have to get well. I think most cases are over-treated rather than under-treated. I haven't very much respect for drugs in the treatment of pneumonia other than simple liniments and possibly an opiate where the child is coughing too much or is too restless. Of course, nursing and controlling the temperature are important, but we usually do that with hydrotherapy and not many drugs.

When it comes to the question of stimulation, I am somewhat at sea⁷ about these little fellows, because I seriously doubt if any cardiac stimulant has any effect on a toxic heart from pneumonia.

We give digitalis, caffein, and we give atropin and alcohol, and sometimes strophanthus, and then in desperation we give adrenalin. I think if the child is well nursed and well nourished, the chief function of a doctor in treating pneumonia is to look out for complications and to see that a lot of things are not done that are usually done in treating these patients.

Dr. N. C. Womack (Jackson): This paper is interesting and important from the standpoint that it is a universal disease. It is something that we are dealing with all the time in our practice. We haven't found any definite method of terminating the disease or of treating it any manner that will terminate the disease earlier than is usual, as we have in some other conditions.

The doctor has referred to pneumonia in the home. That is where most of them take place. A few of them go to the hospital. A great many of us feel that hospital treatment is an ideal treatment for pneumonia and almost everything else. Therefore, I would say that the management of pneumonia in the home in infants and children should as near simulate hospital treatment as is possible. That would mean, first, that when it comes to a question of making a diagnosis that, as nearly as possible, complete laboratory work should be done. You would be surprised at the number who are treating more or these cases in the home and who are doing the laboratory work. They are making their diagnoses from their laboratory appliances, and they are making differential diagnoses which are very important.

The diagnosis is the first thing, and we ordinarily feel that the diagnosis of pneumonia is a simple matter. It is in simple pneumonia, an abrupt, frank, open case. We are seeing cases all the time in which we have to wait several days before we can cinch our diagnosis. It has to be differentiated from several conditions. The atypical type: I would mention appendicitis as a common one, occasionally a certain allergic condition of the lung which will stimulate pneumonia very much, some forms of pleurisy, primary pleurisy, some forms of meningitis (they are rare), particularly the influenza type; but the differential diagnosis is necessary.

The treatment as we have it has been well outlined. There is no treatment, except to support the little patient with the proper nourishment. I do not feed my patients cereals, bread, and things such as that. I may be wrong. I was one of those who would never feed a typhoid case a lot of food. I was afraid of it. I give these pneumonia cases fluids, and plenty of them.

In that connection, the maintenance of the alkali acid base ratio is one of the most important things, because these little fellows with high temperatures are burning up enormous quantities of fluid. Oftentimes they have a relative acidosis and are losing everything they take by mouth. They should have enormous quantities of fluid by rectum, by the mouth if they will take it. Do not fail to use (and I am talking about it in the home now) hypodermoclysis, glucose put up in 50% solution, 1 tube of 450 C.C. normal salt, using tap water and boiling it in the kettle, using a normal salt and giving it with a needle from any kind of a can, just so it is a clean can, and shoot it under the skin. We usually give 10 c.c.'s to the pound, every six, eight, or twelve hours as necessary.

There is another thing you run into in the home. If the child needs support, don't hesitate to take a little sodium citrate solution and draw 25 or 30 c.c.'s of the mother's blood, without typing it, pull it out of the vein, get somebody to hold the arm, clean it up, and turn it upside down two or three times, and stick it in the flank or in the hip of the child. This can be done once a day and it will tide the baby over for twenty-four hours if you don't give it another thing, but don't hold up on the other things.

Watch the ear. Ninety per cent of these cases have ear trouble. They cry, they are restless, they can't sleep. Everybody has to have sleep. A well man has to have sleep, especially a sick baby with pneumonia. Look at his ear. Ten per cent of them will have to be punctured. They will never say a word. You look in there and see a red ear, test it on the otoscope. That is a

mighty good thing to have in the grip. You can't make a mistake.

We have no specific treatment, but they get well. Keep them from complications by careful attention.

Dr. D. W. Jones (Jackson): I want to say a word in commenting on Dr. Little's question: Have we or can we hope to have a specific serum in the treatment of pneumonias; that is, all pneumonias?

Much work has been done along the line of study of pneumococci in the Rockefeller Institute and biological laboratories with a view to developing a specific serum. We know that in any acute infectious diseases the question of whether the patient survives depends upon the action of leukocytes in phagocytosis upon invading bacteria. We know, furthermore, that the action of the leukocytes in this respect is helped by the development of the immune bodies of the patient. In pneumonia, it takes about seven or eight days of ordinary pneumococcus infection, especially in an adult, for this process of immunity and phagocytosis to take place, what we call the crisis.

If we could develop a specific antibody, an artificial serum which, when injected into the blood of a patient would so neutralize the specific toxins of the germ life and so opsonize or sensitize the germ life that the phagocytosis of the leukocytes could be facilitated, undoubtedly that is the theory along which we could save a great deal of time in completing the cycle of pneumonia. That is the future treatment of many cases of pneumococcal infection.

Dr. Little spoke of the types. If I had time I should like to say more about that, and that is the reason Dr. Arrington asked me to speak first. I simply want to say that the Rockefeller Institute and the Biological Laboratories are firmly of the opinion that pretty shortly they will develop a serum for No. 1 or No. 2 that will be very effective. As Dr. Little says, they make extravagant claims for No. 1 already. They say it has reduced the mortality from an ordinary average of twenty per cent down to eight per cent. Whether or not that has been thoroughly established, I do not know, but that is the claim.

If that can be developed, then we certainly will save a lot of lives and a lot of time.

The objection to that general practice, as Dr. Little says, is in the practical execution of the plan. In the first place, we have no facilities at present in general practice for typing pneumonia. Dr. Little spoke of the types 1, 2, 3, and 4. You know that about thirty-five per cent of the cases fall in type No. 1, and possibly thirty-two or

thirty-three per cent fall in type No. 2, which we have hopes of getting a perfect serum for. So, if we would have about two-thirds of it, we could take a shot at it when we get a live serum for No. 1 and No. 2. For the present, the objection is knowing the type.

Dr. Little spoke of the different ages and different years with regard to the mortality—a high mortality in children, and in one epidemic a high mortality in the older people. Type No. 1 is a common infection in children. When that is prevailing, the mortality of course and the morbidity are greater in children. Type No. 3 occurs in the older people, and when the prevailing death rate is high in older people, the chances are we have a prevailing type No. 3. If we could get that readily typed and if we had a serum which would neutralize the antitoxins of that particular type, of course we would have the thing going our way. For the present, the difficulty is the typing. It isn't so very difficult, and I believe the day will soon come when we can have certainly type No. 1 and type No. 2 worked out pretty readily in a good many of the smaller laboratories. It is fairly easy and can be done within six to twelve hours. That gives ample time to get in our work early as Dr. Riley said we have to do.

For the present we would have to merely guess that if sixty-six and two-thirds per cent fall within type No. 1 and No. 2 and thirty-five per cent in No. 1, and if we have a proven serum with type No. 1 and it is in people under twenty, we have a pretty fair guess that we are dealing with type No. 1.

Then there are some other symptomatic points to help us out. What is the objection to using serum for type No. 1? There are several objections. The bulkiness of it makes it impractical to use it subcutaneously because this shows the size of the tube, a good large volume, Squibbs, and the others are about the same size. If we have to use five or six doses in an ordinary case about every six or eight hours apart for two days, it is quite impractical to inject that much into a child, for instance. Six doses of that intravenously is impractical in a good many cases, too, especially in young children. That is one of the difficulties. In time, I think, the serum will be refined and reduced in volume so that we can use it intramuscularly and intravenously to better advantage.

The second objection is the price. I hold in my hand 50 c.c., an ordinary dose, price five dollars. If you have to give six doses at five dollars, the doctor will not have much left in a great many cases.

My time is up but I want to close with this remark: I firmly believe that in a very few years

we will have facilities for typing No. 1 and No. 2 fairly accessible to the general practitioner, and that we will have a refined and reduced form of serum that will be practical in use.

Dr. O. N. Arrington (Brookhaven): I enjoyed both of these papers very much and jotted down a few points that I wish to emphasize. Pneumonia is a self-limited disease. We have no specific cure. It is interesting to study some of the old writings, for instance the writing of Hippocrates who lived about the beginning of the Christian era, and to note how little difference or improvement in treatment we have had since that time. The treatment continuously has been more or less diet, laxatives, counter-irritation, heat.

I do not believe I care to reiterate comments on laxatives. I do want to emphasize, though, the use of laxatives instead of purgatives, as that is a kinder treatment, and we want to conserve the energies of our patients. With regard to stimulants, I believe I will disagree with the doctor in a small measure, and that is this: Let your patient alone as long as he is living and doing well. Reserve your stimulants until you have a tired, exhausted heart.

Counter-irritation, I believe, should be begun early; late, perhaps it does no good.

The application of poultices is old and timely and certainly does no harm. I believe that a flaxseed meal poultices following counter-irritation early is thoroughly in order. I have practiced that treatment. Let us follow very thoroughly simplicity, treating out patients as has been reiterated, by laxatives, diet of a safe character, stimulants late, and treat the patient and not the disease.

Dr. Joe E. Green (Richton): We will probably not have any subject discussed that interests more of us here than pneumonia. I thoroughly enjoyed both of these papers. I want to again re-emphasize what Dr. Riley said about quietness. About fifteen years ago I happened to have a pain in my abdomen and I felt that it was appendicitis and called in Joe Armstrong. He in turn called in Billie Gittens and he in turn called in George Brown. They said it was appendicitis and proceeded to operate on me on the kitchen table, and why I am here today God alone knows. But I am living, thank the Lord.

I learned then that when a man is sick, the thing he needs is quiet, and I finally got quietness, too.

The trouble is that with the children, they can't talk, but it is all right for all the sisters to come in and discuss all the rest of them who are not there. A child will be resting and then three or four will get around and start shooting "hot air"

and that temperature will go up in thirty minutes. If you don't believe it, try it.

Keep that patient quiet, and if it comes to a very important part, be nice about it. And if you can't do anything else, just say, "Damn it, stay out." The baby is entitled to that much.

There is another thing in bronchopneumonias. We all think about fresh air. If we don't watch ourselves in the average home, we will come back and find that child lying in a draft of cold air, which is a fine route to the cemetery. We want warm air and should so impress it on those people where the baby is being treated in the home.

I should like to have a racket raised, so I am going to raise one here in regard to vaccine. I know that most of you don't believe in vaccine, and I think I know the reason.

About three years ago I was in Saluda, North Carolina. By the way, I want to tell you small country doctors, and it won't hurt you big town doctors, if you want to hear more real baby discussions of the scientific kind in two weeks than you would get in any post-graduate course in two months, go to Saluda. Strong is a big fellow down here, but he is just an average fellow up there.

I asked Dr. Mallaird of the University of Georgia what he thought of vaccines. He said, "I don't think they are any good."

I said, "Let me ask you another question. Have you ever tried vaccine?"

He hesitated and then said, "I think I used it on one case."

For fifteen years I have been using every mixed vaccine. I use Sherman in my cold cases for common cold, and not a single case of pneumonia have I ever treated in a baby to whom I have given the cold vaccine.

I heard a pediatrician from Miami in the discussion. He said he had been at it longer than that and he told the mothers if the children were given the cold vaccine he would treat them free of charge if they had pneumonia. He never had a case of pneumonia develop but one. I have never killed one yet.

With regard to differential diagnosis, you had better watch your step, boy. Appendicitis and lobar pneumonia will throw you off guard. You may have a pain in the stomach and it will be pneumonia, or you may have a pain in the lung and it may be appendicitis. You had better be careful in going over the lung and abdomen, or you will open up and have a pneumonia case, and probably fail to open up and have an appendicitis case.

I believe in external application. I believe the same as Dr. Lewis (he is still living, thank the Lord)—keep the baby's chest about like a well-spanked baby. That is what I try to do and that is the direction I give. You can do that by a light application of one to six turpentine. If you want to use some oil, all right, or you can use just a mustard solution with a cloth wrung out of it, and if that chest doesn't stay red for three hours, I miss my guess, and if it stays red a half a day, all right.

These papers are very timely. Don't forget the last thing. All these points have been brought out, but don't starve the baby to death. During those seven, nine, or twelve days, try to get in food enough to hold up the caloric needs, because God knows if he ever needed it he needs it then. Make them eat and check up on it. You will find that half these children die from starvation and acidosis instead of pneumonia.

Dr. R. W. Rowland (Oxford): I didn't intend to discuss this paper, but since digitalis was mentioned by both essayists, I am constrained to do so.

There is a growing tendency on the part of a great many physicians to digitalize their pneumonia patients during the first three days of the attack.

We have been making some research studies in digitalis in the Pharmacology Department of the University, and I have found some interesting things. I have assumed that digitalis has a fuel value. Bear that in mind. The principal factor in pneumonia fatalities is heart failure. They all die with heart failure—ten per cent of them with auricular fibrillation.

The main factor involved in that feature is oxygen starvation with a resultant perverted metabolism of glucose by the heart muscle as well as other muscles. Digitalis is a glucosid—like a glucose. I assumed it was capable of being burned and that it had a fuel value.

We ran a gram of sugar through the calorimeter and it raised a kilogram of water through four degrees. We had some fresh powder from digitalis leaves. We ran a gram of freshly powdered digitalis leaves through the calorimeter and it yielded nearly twice the fuel value of the sugar.

Since glucose is the source of muscular energy, both in the heart muscle and in the striated muscle, the heart muscle using about five milligrams of glucose for each gram of weight every hour, the glucosids are also carbohydrates, but in a combined form, not as readily oxidized but more slowly oxidized than sugar, having a selective affinitive for the heart muscle, stored there and metabolized there, increasing the energy of the heart muscle. That statement is denied.

Pharmacologists tell us that digitalis does not add to the energy of the heart muscle. If it does not, I want to know how anybody can explain the increase in contractility and tonicity of the heart muscle. If it is not the result of an increased energy, what is it the result of? If you are not saying that the heart is energized when you say the contractility is increased, what are you saying? What do you mean? Mind you, that was the powder of digitalis leaves.

We are now running through the calorimeter the active principles. We are going to see what we can get out of that. We are now running through the calorimeter digitoxin. We are making a half dozen or a dozen different trials. We are going to try to find what active fuel principles it has. I am strongly impressed with the results we have already obtained.

I am just as sure as I am that I am standing on my feet that the effect you get from the administration of digitalis is through its power to energize the heart muscle, because it is burned in the heart muscle. It is metabolized there, just as glucose is metabolized there. It re-enforces the glucose normally consumed by the heart.

In pneumonia there is less than normal consumed because of the oxygen starvation. You get the weak heart and finally failure.

I don't like to call digitalis a food. In one sense it is a food; it depends altogether on what you mean by a food. I wouldn't call it a food. Alcohol is a food. It burns and yields energy, but is quickly destroyed. Digitalis being relatively insoluble, is stored in the heart muscle and is slowly oxidized. That is why you get the continuous effect of it. There isn't any other drug in the book like it. There isn't any other drug that will compare anywhere with digitalis in the capacity of the heart muscle to store it.

I want to agree with the essayist in the treatment. I didn't intend to say this, but I did so simply because digitalis was brought up, and I thought it would be well to mention it.

We are studying it pretty closely and I am in hopes that within the next few months I will be able to give you our results. I believe we are on the right track.

Dr. F. G. Riley (closing): I don't believe I have another word to say. I thank these men for their discussion of my paper. I appreciate all that has been said, and especially Dr. Rowland's talk in regard to digitalis.

Dr. W. L. Little (closing): My closing will be just about as brief as my paper. From the investigations I have made in getting up this paper, I am convinced that we are going to have a serum

pretty soon for type No. 1 that will be all right, and perhaps one for No. 2.

To go back a little, just forty-one years ago, maybe a few days before or a few days later, Dr. Jones of New Orleans vaccinated me with a scab for smallpox that he took from a child. He said it was all right. I don't know whether or not it was.

At that time we knew nothing about typhoid vaccine. I had never heard of diphtheria anti-toxin, and all these things came along later. From the advance information I have been able to obtain, I am sure we are going to get it right away. I am indebted to Cecil's text on the study in the Rockefeller Institute and to Dr. Janis of New Orleans for these types. Their studies have been very convincing.

OXYPERITONEUM.*

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Oxyperitoneum is the injection of oxygen into the peritoneal cavity for the treatment of intestinal tuberculosis. It has been reported in Europe for many years and in America more recently.

Dr. A. L. Garbat in the American Medical Journey for February 27, 1926, states that the first article of oxyperitoneum was published in Vienna in 1893 by Mosetig-Moorhof, who called attention to this new treatment for tuberculous peritonitis, giving a case history of a child four years old who was cured by injections of air into the intraperitoneal space. Several months later in Berlin, Nolen² recommended the same form of therapy as a new method, citing three cases treated to good advantage. Between 1893 and 1921, six other German physicians treated tuberculous peritonitis with air injections and reported excellent results. The names of these physicians with brief case histories are contained in Dr. Garbat's paper. In Paris, in 1921, six

cases of tuberculous peritonitis were treated with oxyperitoneum by Weil and Loiseleur,³ resulting in a complete cure in three cases.

These German and French physicians used air and in a few instances nitrogen for giving pneumoperitoneum. In 1920, Rost,⁴ an Englishman, reported several cases of tuberculosis treated by oxygen inflations with markedly good results. He not only used injections of oxygen for tuberculous peritonitis but also for tuberculous joints and psoas abscess. Arthur Stein⁵ made the first report in the United States on oxygen inflations of the peritoneal cavity for tuberculous exudative peritonitis. He first recorded the beneficial results to be obtained by oxyperitoneum when patients who had been inflated with oxygen for roentgen examination of the abdominal organs showed marked improvement following the inflations. However, Stein was preceded by Godwin,⁶ who in 1913 after using oxygen injections following coeliotomy in ascitic tuberculous peritonitis, noted remarkable improvement in the patients so treated and marveled that the procedure was not in universal use. In the same year, Bainbridge⁷ recommended oxyperitoneum for its effect on certain types of tuberculous peritonitis.

In 1924, Walter L. Mattick⁸ gave his conclusions about oxyperitoneum in his report, "Intraperitoneal Oxygen Inflations in the Treatment of Ascitic Tuberculous Peritonitis," with a case history which he states is the second report on such a procedure. Oscar Monroe Gilbert,⁹ of Boulder, Colorado, in 1924 and 1926 reports four cases treated with excellent improvement. However, it was astonishing to me to learn what a small percentage of physicians employ this treatment to relieve intestinal tuberculosis, as I consider it one of the simplest, safest forms of therapy. My opinion is, that numerous physicians have helped many cases of which no report has been made, and when I began giving oxyperitoneum five years ago, I did not know its use was limited to a few physicians and sanatoriums.

*Read before the Section on Hygiene and Public Health, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

When practicable, laparotomy has always been considered the ideal treatment for tuberculous peritonitis, and Dr. Carroll Smith¹⁰ makes the assertion that 75 per cent of the ascitic forms of tuberculous peritonitis are cured by laparotomy but what form of treatment should we use when ascites recurs, when none is present and when a patient does not retain the immediate improvement that usually follows laparotomy?

Several years ago, Dr. Shivers and I operated upon a doctor for tuberculous peritonitis. The operation was resorted to as a desperate measure, for the man was apparently going to die. After operation, he convalesced rapidly and made an improvement sufficient to give him several years work in the Woodman Sanatorium Laboratory and laboratories in Colorado Springs. For some unknown reason this particular operation impressed me with the amount of benefit given to patients suffering with tuberculous peritonitis by simply opening the abdomen and allowing the air to enter, so when I had an opportunity to read the few articles, reports and case histories available on oxyperitoneum, it appealed to me as logical, that if air entering the intraperitoneal cavity through surgery was so helpful, oxygen without operation should be equally valuable and could be repeated at will.

My first oxyperitoneum was given to a young lady with a well advanced case of pulmonary tuberculosis, who was operated on by Dr. McKinnie seven years previously for chronic appendicitis. We judged her appendix would be tuberculous and when the abdomen was opened we found not only a tuberculous appendix but a tuberculous condition extending on the cecum. The appendix and all the infected area possible was removed. After operation the patient made good improvement over a period of two years, when she experienced a return of all the symptoms she had previous to operation and lost ground rapidly. Further surgery did not seem indicated, helio-

therapy and ordinary hygienic care afforded no relief. After considerable hesitation, I injected 500 c.c. of oxygen into the intraperitoneal space. In spite of my previous conclusions, I was agreeably surprised when she showed immediate improvement. She reported her appetite increased at the next meal. She gained weight, the abdominal symptoms subsided and after fourteen injections of oxygen, she has been at home in Indiana for two years, in better health than she has had for many years.

TECHNIC.

The technic of oxyperitoneum is identical with the one used for artificial pneumothorax except that it is done over the abdomen so as to get into the peritoneal cavity. The equipment necessary is the same as that for artificial pneumothorax but the one bottle of the pneumothorax machine is filled with oxygen instead of air.

There has been extensive discussion about the site of puncture. Dr. R. L. Laney,¹¹ of the Lake Julia Sanatorium, Puposky, Minnesota, makes his injection in the region of McBurney's point. Dr. D. E. Holmdahl¹² reports his site in the anterior axillary line at about the eighth intercostal space on the left side, but I make my puncture on the left side opposite McBurney's point, just below and to the left of the umbilicus. I ascertain just before beginning treatment that the bladder is empty. I use a small hypodermic needle to inject a 0.5 per cent novocain solution, having first painted the point of puncture with iodine. The needle used is a very long one in order to be positive that the solution is carried into the intraperitoneal space. The patients seldom complain of discomfort during this procedure.

After anesthetizing, the tube connection can either be attached to this needle or replaced with a regular artificial pneumothorax needle and the tube connection made. As the needle enters the abdominal cavity the manometer at once registers a negative pressure. After slight inflation

with oxygen, if the needle is in a free pocket of oxygen, the manometer will show a slight plus pressure. I have injected from 3000 to 1000 c.c. of oxlgen. The patients frequently complain of pain in the shoulders, more often in the right than in the left, but this is of a very temporary character and can be relieved by lowering the shoulders and elevating the extremities, as it is apparently of a diaphragmatic character. At times the amount of pressure necessary to force the needle through the abdominal wall causes apprehension in nervous patients. This is another reason why I use an extra long needle to which the tube may be connected when necessary without replacing with an artificial pneumothorax needle. The amount of oxygen given depends somewhat on the anatomical and psychological condition of the patient but I like to give enough oxygen to slightly distend the abdomen.

I. C. Rubin, of New York, in 1920, dispensed with abdominal puncture in giving oxyperitoneum to his female patients by inserting a steel catheter into the uterus, allowing the oxygen to flow through the tubes into the peritoneal cavity. My objection to this technic has been that there is a possible danger of carrying bacteria from the uterus and tubes into the peritoneum, which would cause a general peritonitis. I have given over a hundred inflations with no unfavorable results, no general peritonitis, or other inflammatory conditions.

TYPES OF TUBERCULOUS PERITONITIS TREATED.

Hoynihan describes three classes of tuberculous peritonitis: ascitic, fibrous and suppurative. Case histories from foreign literature with few exceptions deal with the ascitic form when treated by oxyperitoneum. Mattick's⁸ report as well as the four cases reported by Gilbert⁹ were of the same type and a paracentesis was done in each case before the oxyperitoneum. These case reports also show that oxyperitoneum was given about three times to each case but I have repeated my treatments as many

as fourteen times and usually give it until I am satisfied with the advancement made in each individual case.

I have treated nine cases of intestinal tuberculosis with oxyperitoneum during the past five years, giving about 110 inflations. Four of these cases were of the ulcerative type on which a laparotomy has been done from one to three years previous to oxyperitoneum. Diagnosis was established by operation and in each case a local focus of infection removed. Two cases were ascitic tuberculous peritonitis and four I diagnosed as ulcerative but they could have been fibrous. Eight of these patients had pulmonary tuberculosis. The ninth patient so far as could be established did not have pulmonary tuberculosis, her intestinal tuberculosis having been discovered on operation for chronic appendicitis. In diagnosing four of my cases as ulcerative, with a possibility of their being fibrous instead, I was dealing with symptoms, which is often unfortunately the case in diagnosing intestinal tuberculosis. Some authorities claim good results in diagnosing tuberculous peritonitis by roentgen-ray, but this has not been my experience. Four of my cases were, as previously stated, diagnosed during operation, but as all nine patients received benefit from oxyperitoneum, it leads me to the conclusion there was intestinal tuberculosis present in all of them.

I cannot understand how the use of oxygen would greatly benefit tuberculous enteritis but the symptoms are better for a while. Dr. Gilbert⁹ gives a report of two cases of tuberculous enterocolitis in which there was extensive involvement of the lower ileum and colon, so that on opening the abdomen, resection was impossible and enterocolostomy impracticable. A tuberculous appendix was removed in each case. In one of these patients air was introduced as the closing of the incision was completed but the patient died in four days although more comfortable than such cases usually are. The second patient lived three weeks and had three additional inflations at five

day periods. He begged for oxygen as he was much more comfortable when it was present in his abdomen. Dr. Gilbert adds that while these patients are usually more comfortable after operation even without oxygen, he believes in these two cases that oxygen inflation added to their comfort. He also states that, although air is absorbed from the peritoneal cavity, we have nothing to indicate that air so absorbed would reach the intestinal mucosa any more readily than it would when absorbed by the alveoli of the lungs.

RESULTS.

Of my nine cases four are apparently cured. One patient is dead, three are much improved but still taking oxyperitoneum, and one case gained over a period of two years but is now seriously ill, due, I believe, to the fact that he did not come back for treatment as directed.

Three of the four cases I consider cured, were those which had been operated on and a local focus of infection removed. They progressed nicely for a while after operation and then experienced a recurrence of symptoms present before operation. This point I believe is worthy of consideration; the cases where the foci were removed, improved most rapidly, although I believe that all of these cases will ultimately reach the arrested stage.

Without exception my patients after oxyperitoneum have been relieved of their abdominal symptoms shortly after treatment, to such an extent, that they began asking for more oxygen as soon as it was apparent that the oxygen had been absorbed to an appreciable degree. They reported an immediate increase of appetite, from the first meal on.

The absorption of fluid from the abdomen can also be determined after a short interval. The doughy appearance and character of the abdomen disappears. Diarrhea is lessened and eventually stopped.

In my female patients, who previous to treatment by oxyperitoneum have complained of leucorrhœal discharge and pain and discomfort during the menstrual period, these conditions were also apparently cured. Menses became regular, pain was eliminated and the discharge was less. This fact calls to my mind something Mayo has said to the effect that tuberculous peritonitis in women most commonly has its local focus of infection in the Fallopian tubes.

The most important effect of oxyperitoneum is the speedy relief afforded to the patient by the rapid disappearance of all symptoms, as these patients invariably report improvement in the twenty-four hours following the first oxyperitoneum.

The symptoms removed are usually the discomfort at the menstrual period, relief of pain, nausea and vomiting, loss of appetite and diarrhea. Absorption of fluid is also accomplished.

There are several theories advanced as to how good results are obtained in intestinal tuberculosis by using oxyperitoneum. Dr. Laney¹¹ gives his opinion as being, that favorable results are derived from both increased intra-abdominal pressure and from a direct chemical action of the oxygen.

Without doubt there must exist a capillary stasis where intestinal tuberculosis is present. If the oxygen is taken up by the blood stream after oxyperitoneum it is bound to act as a stimulant and exhilarant, which probably accounts for the early increase in appetite due to the beneficial effect of the oxygen on the stasis.

Murphy at one time saw a peritoneum four days after operation for tuberculous peritonitis. It was intensely congested, vascularity was greatly augmented, gloss was almost gone and it contained seropurulent fluid. Active proliferation seemed to be encapsulating the tuberculous foci. This is probably the way intestinal tuberculosis is cured, that is, by encapsulation making

the process quiescent. In a similar manner oxygen acting as a foreign body in the abdomen could cause a distinct reaction of the tissues to the infection and the oxygen could have some specific action on the bacilli to destroy them.

Dr. Gilbert⁹ suggests that there is evidence to support the view that simple trauma (such as would be produced if oxygen acts as a foreign body in the peritoneal cavity) may favor the healing of sluggish tuberculous processes. We all know from experience of patients who have begun to improve after an unsuccessful attempt to give artificial pneumothorax and this would indicate that we may have started some process by means of the simple trauma caused by the attempted collapse.

The foregoing statements are the theories set forward to explain the favorable results which are undoubtedly secured by using oxyperitoneum for the treatment of intestinal tuberculosis.

COMMENTS.

In one of my patients with ascites, I did not know there was fluid present until after 600 c.c. of oxygen had been given when the fluid could be made to splash distinctly by manipulation of the abdomen. This fluid was gradually absorbed and disappeared in about three weeks. Dourre¹³ reports air found in an abdomen three weeks after injections but oxygen is apparently more quickly absorbed, although I have found it present ten days after oxyperitoneum.

My patient who died was a well advanced case of pulmonary tuberculosis and I diagnosed the intestinal complication as tuberculous enteritis with ascites. At her first oxyperitoneum I injected 800 c.c. of oxygen and when the treatment was finished the fluid could easily be heard by auscultation or on movement of the body. I gave her two additional inflations, at intervals of three months each and the fluid was absorbed. She obtained a wonderful

relief of symptoms but I believe the enteritis was a contributing cause of death.

I was anxious to secure a post-mortem on her for a surgeon with whom I discussed oxyperitoneum contended there was danger of causing adhesions at the point where the needle entered the peritoneum. The report of the autopsy by Dr. J. R. Haney was as follows:

"On account of objections of family to procedure, this autopsy was limited to the abdomen of a female, aged 24 years. The abdomen was opened and peritoneum inspected. It had a glossy, moist appearance and a normal color. There were no adhesions to the parietal or visceral peritoneum. No adhesions to the tubes are, appendix. Female organs appeared normal. The small intestine showed frequent areas where ulceration has destroyed the mucosa, submucosa and muscular coats. The wall of the large intestine was very thin; no tubercles on the peritoneum; some enlargement of the mesenteric and retroperitoneal lymph glands. Apparently no involvement of other abdominal viscera. No fluid found in abdomen."

The autopsy proved that the use of oxygen into the intraperitoneal space did not cause adhesions where the needle entered the peritoneum. The intestines were absolutely as free as if no oxygen had been injected or as if no fluid had existed before oxyperitoneum and there was no fluid in the abdomen at the time of death, although, as noted above, considerable ascites was present before treatment. Her last oxygen peritoneum was given May 3, 1928, and death occurred June 4.

However, previous to this post-mortem, I could not believe there were adhesions because after the first injection of oxygen I experienced no difficulty in giving subsequent treatment, and this would not have been the case if oxyperitoneum caused adhesions. Rost⁴ found that the injection of oxygen would separate adherent surfaces and tended to break up adhesions. He also

believed the oxygen inflations prevented the outpouring of the exudate, which would help to account for the gradual absorption of fluid after oxyperitoneum.

SUMMARY.

1. Oxyperitoneum was first used for treating tuberculous peritonitis in Europe in 1893. In 1921, Arthur Stein made a report in the United States of a case of tuberculous peritonitis cured by using this therapy.

2. A comparison of oxyperitoneum with laparotomy shows that, while laparotomy is the ideal treatment in some cases of tuberculous peritonitis, it is not always practicable, especially when the symptoms recur after operation. Three of my cases apparently cured are ones where the local focus of infection had been removed by operation and the patients later had a recurrence of all symptoms.

3. The technic of oxyperitoneum is practically the same as the one used in giving artificial pneumothorax except oxygen is used instead of air and the puncture is made over the abdomen instead of in the pleura.

4. All three types of tuberculous peritonitis receive benefit from oxyperitoneum. I do not understand how tuberculous enteritis receives benefit.

5. The results obtained are a prompt and usually permanent relief of all symptoms, such as nausea, vomiting, menstrual pain when associated with the peritonitis, loss of appetite and diarrhea. Fluid when present is absorbed.

6. The theories advanced as to how results are obtained are: (1) From increased intra-abdominal pressure; (2) from direct chemical action of the oxygen; (3) relief of capillary stasis; (4) oxygen acting as a foreign body in the peritoneal cavity could produce a simple trauma favorable to the healing of sluggish tuberculosis processes by destructive action on the bacillus.

7. Autopsy revealed no fluid in abdomen of a woman who had had ascitic tuberculous peritonitis treated by oxyperitoneum. There were no adhesions. Some enlargement of the lymph glands of the large intestine was present as well as areas of destruction by ulceration on the small intestine.

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DISCUSSION.

Dr. H. R. Shands (Jackson): First, I want to thank Dr. McCorkle for coming down here to present this subject to us. While tuberculous peritonitis is not such a common disease, I think it is one that certainly needs the most scientific and active treatment.

When I studied surgery twenty-five years ago, the statement was made that simply opening the abdomen and closing it would cure fifty per cent of the cases of tuberculous peritonitis. I couldn't understand that then and I can't understand it now. I know from experience that in some seven or eight cases this is an understatement rather than an overstatement of the fact.

During the past twenty-five years I have operated on eight cases of tuberculous peritonitis, and all but one recovered, at least temporarily, from the disease; that is, they were relieved of symptoms.

I think one advantage possibly in connection with the use of oxyperitoneum with a needle rather than a laparotomy is one of the very essential things in the treatment of any form of tubercu-

losis—the continued hygienic treatment—whether in a hospital or under the care of a physician who has given this treatment from time to time. Naturally, he can have better control than if he operates in the hospital and then lets the patient go out and tells some other doctor how to carry on the treatment.

The cases I have treated, with the exception of one, have made a complete recovery, and some of them who have returned eight or ten years later have shown a complete cure.

One of the cases I operated upon in 1910 for tuberculous peritonitis came in in a very critical condition. We went ahead with the operation, and after four or five years he broke down with tuberculosis and has been living for the past twenty years in Colorado Springs. He is getting along well, but developed a marked tuberculosis of the lungs. I have seen as much improvement in the plastic exudative type as in the ascitic type. I have seen cases in such a condition that it looked as if you had taken a hat full of sand, cement and rocks and matted them together. After laparotomy the improvement has been wonderful, and I think explicable.

When I heard I was to discuss this paper I decided to bring some roentgenograms. This is the case of a colored boy whom I saw three years ago in February. He came to me extremely emaciated, vomiting everything he ate. That is all the information I could get from him. I did not make a diagnosis until operation. This is the stomach picture immediately after barium meal. This is a stomach picture six hours later showing complete retention of everything in his stomach.

I opened his abdomen for pyloric obstruction. I found all of his intestines and stomach matted together with tuberculous peritonitis. I knew that an attempt to open the intestinal tract in the presence of tuberculous peritonitis would be fatal, because if you get a fecal fistula in tuberculous peritonitis the case is gone. I did nothing but remove the appendix and close the abdomen.

This boy is a porter and bootblack at the Edwards House. I gave him hygienic treatment for a few months. All of the obstruction disappeared. He got fat. He worked there for two years as a porter, but now is a t.b. This is most common unless they have prolonged treatment for tuberculosis.

I am sure that Dr. McCorkle has brought before us an important subject. Most people prefer this

method to a laparotomy. In my own case, I believe I would rather have a laparotomy, because in that way you prove the diagnosis. Most of the cases I have operated on, thinking they were tuberculous peritonitis, have turned out to be something else, and then again I have found several cases of tuberculous peritonitis which I did not anticipate at all before operation.

With regard to the method of giving oxyperitoneum, I have given it only once, in a case that had a very bad heart disease. It was a case of sepsis which developed tuberculous peritonitis. For that reason we thought it best not to operate. Of course, in the West, where Dr. McCorkle comes from, they use the same apparatus for artificial pneumothorax. We don't use artificial pneumothorax. I dare say there are not four machines in Mississippi for artificial pneumothorax. I have a machine because I have practiced in the West. My method is simply to take a tank of oxygen that you can buy in a drug store and connect a tube to it and let it run through a little bottle of water with two stoppers. That cuts down the pressure. Stick in a needle and then put a tube from the needle to the bottle of water and then stick the needle in the cavity. It is a very simple apparatus and I suppose one could be put together for fifty cents.

Dr. Henry Boswell (Sanatorium): I appreciate Dr. McCorkle's paper. It was a splendid résumé of information along this line and his conclusions are certainly in accordance with our own work at the sanatorium.

I did not look up to see on how many cases we had actually used this treatment. I believe it was several though. We have been using it for about five years. I will say that we have used it with uniformly good results. Of the patients we have treated so far, all of them are living. We haven't had a death in our group.

As to the location for puncture, we find that has to be determined by the individual patient. You can make an injection in one side and get into a mass of adhesions and the patient will get no air, but you can inject the needle on the other side and be able to blow him up. After three or four injections the mass becomes loosened and he gets uniform distention of the abdomen.

The use of artificial pneumothorax equipment in this state is impractical, because, as Dr. Shands stated, there are no machines. The technic that we use is very simple, even simpler than that

stated by Dr. Shands. Oxygen is oxygen, and it is pure. There is no reason that it should be watched before putting it into the abdominal cavity. We have a tank of oxygen with a rubber tube and a needle on the end. We can feel the gentle blow of the oxygen on the tip of the nose, which is usually very sensitive. We stick the needle in the patient's side and give him oxygen until he is uncomfortable. We don't attempt to measure it. There is no reason for our measuring it.

That is all I am going to say about it. Dr. Hayes of California has perhaps given more pneumothorax than any man in the country. Dr. Price of Memphis has been using it for the last five or six years. Most of the cases we see are referred to us by the surgeons. Most cases of peritonitis are discovered on a diagnosis of appendicitis or something of that sort. Then they are sent to us and it is up to us to do what we think best.

We try those post-operative cases for a while on hygienic treatment. If they don't improve, we go in there with oxygen.

I am going to report two cases very briefly. One was a boy who was sent to us, his whole family having died of tuberculosis. He had a very definite, easily diagnosed tuberculous peritonitis. He was emaciated and had a large abdomen. I told his people that he would live for about thirty days so they brought him into the institution. We withdrew as much of the fluid as we could and replaced it with oxygen. All told, during the course of about fourteen inflations in that particular patient, we withdrew thirteen gallons of fluid and replaced it each time with oxygen. That young man finally got so well that he ran away. He is now in a school in Charleston and is as well as anybody. I have had several communications from the board of trustees.

I had another and the most remarkable case I have ever seen. If you surgeons can explain it to me, I am willing to say that I learn something every day. A young lady from this state was admitted to the institution with double pulmonary tuberculosis. She was placed on treatment. In a short time we discovered a beginning tumor in the lower abdomen. I had a surgeon examine her and his diagnosis was an ovarian cyst. The

tumor continued to grow. He asked me if I could vouch for the girl. He declared she was pregnant. The tumor felt similar to a pregnant uterus at about six and one-half months. One night she developed what we all thought to be acute appendicitis. I called for the surgeon to operate on her and sent for her family. They came in on Sunday morning and we opened the abdomen. To our great surprise, when we got in there everything in the abdomen was a mass of adhesions, adhesions to the peritoneum, intestines, uterus, tubes and ovaries, with bloody fluid typical of millions and millions of little tubercles. I turned to the surgeon and told him to close her up. I walked to the outside to the father and the mother and said, "I am sorry to inform you, but your daughter will be dead within two or three weeks. She has double pulmonary infection and all that mass."

I went back into the room and told them to close her tightly and to put adhesive all the way around her body and we would put her on oxyperitoneum. We did so. The girl immediately began to improve, all symptoms began to disappear immediately, all pains were relieved. The tumor gradually disappeared for a while, and then disappeared entirely. Today there is no evidence of a tumor in her abdomen. She is strong and healthy looking and working in my roentgen-ray department. I am not hoping or wishing her any hard luck, but if I ever get an opportunity to go back into that abdomen I certainly want to go.

Oxyperitoneum is very valuable not only in tuberculous peritonitis, but in enteritis.

Dr. W. B. McCorkle (Closing): I was was glad to hear what Dr. Shands and Dr. Boswell had to say. My experience in peculiar phenomena after the injection of oxygen into the peritoneum has been along the lines described by Dr. Boswell. I can't understand why, though.

With regard to the technic in giving artificial pneumothorax, in our country pneumothorax machines are very common. It isn't necessary to know the amount of oxygen put into the abdomen, but we usually keep a record of it.

I believe you will find tuberculous peritonitis and tuberculosis enteritis more common than you think if you will look into it, and I know you will all be pleased with the use of oxygen if you will try it.

ABDOMINAL DRAINAGE*

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The subject of drainage in abdominal surgery is of grave importance. "Drain when in doubt" was the old admonition; "Do not drain when in doubt" is the new. What is one to do? You remember that case you did not drain when you would have given a chromo if you had drained; and you remember that case you did drain when you felt sure the drainage material caused an infected wound. This question is not solved by an arbitrary statement but by careful consideration of all the factors involved.

The peritoneum, as pointed out by many observers, has not only an absorptive function but also one of resistance. Its absorptive function is markedly in evidence by profound symptoms following the slightest infection; its resistance is demonstrated by the complete annihilation of a small, known amount of bacteria, and by the pouring out of large amounts of exudate, formation of adhesions, etc. in the more extensive infections. Herein lies the solution of the problem. Who can tell just how much a given peritoneum can resist?

The physiological and pathological reaction of the peritoneum to drainage material is of vital importance. "Yates, by his experiments, in placing different forms of drainage in the peritoneal cavity of dogs and then in a given number of hours filling the abdomen with carmine solution, was able to determine definitely that all forms of drainage was closed, so that absolutely no drainage from the peritoneal cavity would take place after six hours". Coffey, recognizing this rapid sealing-off process, applied the term "quarantine" to drainage. "The entire involved area must be thrown into one com-

partment by the proper placing of drainage material and the healthy parts thus quarantined."

Coffey also calls attention to the necessity of having the outlet of the drained area sufficiently large to prevent damming back of the rapidly forming exudate, maintaining that the exudate is composed largely of water and if not rapidly removed the watery portion is absorbed, leaving the fibrin to form extensive adhesions. The more rapid and complete the removal of the inflammatory products the less the adhesions.

In considering the physics of abdominal drainage two forces have usually been considered, that of gravity or so-called dependent drainage, and that of capillary attraction. Dependent drainage is practically limited to the cul de sac in the female. Capillary drainage is brought about by small tubes, gauze, folded rubber tissue, etc. The third force, and one which has not been emphasized in the literature as far as I have been able to discover after limited search is that of intra-abdominal pressure. The abdominal cavity is not a rigid box but one whose walls are made up largely of muscular tissue and is subject to varying degrees of intra-abdominal pressure. Fluid within this cavity will be forced through an open tube regardless of gravity or capillary attraction. I have seen, while dressing wounds, large clots of blood forced up through open tubes for a distance of two or three inches above the ends of the tubes. Gauze in the tubes is a hinderance and is not needed.

It is important to remember that this intra-abdominal pressure, which is forcing the exudate from the abdomen, is also forcing the wound open and is pressing in on the drainage material. The wound edges must be held stationary for the time being, to prevent eversion, and must be brought closer together as the drainage material is removed. Also, there must be no lateral openings in the tubes for the same

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pressure will force the delicate tissues into these openings and prevent the painless and non-destructive removal of the tubes. Again, this same pressure will rapidly close the cavity occupied by the drainage material if the drainage material is removed before firm adhesions have formed.

To illustrate by concrete example, let us consider the drainage of an abscessed appendix occupying an area of three or four square inches on the posterior abdominal wall. Soft rubber tubes, but hard enough not to collapse, one-fourth to three eighths inches in diameter with longitudinal sections cut from the lower end are used. The appendix and all debris has been removed and contamination of uninvolved tissues prevented. A sufficient number of tubes are placed in to cover the entire involved area. The wound is sutured loosely up to the tubes as usual. Now untied through and through silk-worm gut sutures are placed every half inch in the remainder of the wound. These pass between the tubes and do not interfere with the removal of the tubes. At the end of twenty-four hours there has been an enormous discharge and the wound has tightened about the tubes. About half of the tubes are removed, which reduces the size of the cavity and relieves the pressure and thus the pressure necrosis. This pressure necrosis and infection, due to prolonged drainage is why, to my mind, drainage has come into disrepute. No pain is experienced in removing these tubes. The wound edges must now be brought in but not entirely in contact by tying the sutures already placed. The remaining tubes are antisepticated at the skin edges with mercurochrome. The second day the discharge has materially decreased, and, depending on its character and amount, all or nearly all of the remaining tubes are removed and the sutures tightened again. The tubes, as they are being removed, are clamped at the outer end to prevent the fluid standing in them falling back into the cavity.

Often in mild cases where there is some doubt whether drainage is needed or not, only one tube is used which is withdrawn in twenty-four hours, it having removed an enormous amount of discharge and made an easier convalescence even though the defensive powers could have overcome the infection alone. When the tubes are removed thus early and the wound properly treated, healing is by first-intention and no harm has been done.

Coffey enumerated four qualities which drainage material ought to possess when used in the abdomen:

1. The surface on the side of the general peritoneal cavity must be smooth and inoffensive to the abdominal organs coming in contact with it.
2. It must remain accurately in place.
3. It must provide ample drainage of the infected and injured segment.
4. It must be so constructed that it may be removed with the least possible trauma.

Soft rubber tubes used as described meet all the requirements, and better it seems to me, than his system of numerous small strips of gauze surrounded by rubber tissue, which is only an improved cigarette drain.

As to drainage in general peritonitis, it seems to be the consensus of opinion that the point of origin of the pus and localized abscesses should be drained. It is conceded that there is no known method of draining the abdominal cavity as a whole due to the sealing-off process about the drainage material. This emphasizes again the importance of draining just as large an area as the inflammatory process involves.

As to the question of when and when not to drain, every surgeon must decide that for himself. As for me I will drain whenever there is the slightest oozing of blood which cannot be controlled; when-

ever pus known to be active or virile comes in contact with peritoneum which is not to be removed; whenever the smallest bit of gangrenous or infected tissue must be left within the cavity.

A more important question than whether to drain or not in doubtful cases, is what sort of drainage to use, how to use it, and how soon to remove it. Why not drain when in doubt when a drain can be used which will safe-guard the patient's life, which will do no harm, which can be removed without pain, which will make convalescence easier, and which will not delay healing of the wound?

SOME ACUTE CONDITIONS WITHIN THE ABDOMEN*

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As "procrastination is the thief of time", so, in my judgment, is delay the greatest single factor in the mortality following surgical procedures. This is especially true in dealing with acute inflammatory conditions within the abdomen, where the process at the outset is usually confined to a single organ which can generally be removed, or surgically dealt with, without great hazard to the patient. Long has the proper manner in which to deal with acute conditions within the abdomen been a fruitful source for controversial argument; so long, indeed, that it would seem there should have been evolved a practical unanimity of opinion. That this is not true, however, is evidenced by replies that I have received to a questionnaire sent to many of the leading surgeons of this country and abroad, answers being received from one hundred and thirty-seven.

Three queries were propounded and to these three I shall confine myself in this paper. The questions asked were: as to

the advisability of immediate operation in acute cholecystitis, acute appendicitis and acute salpingitis, with the further request that I be supplied with data as to the relative mortality and morbidity in early and late operations for acute salpingitis.

I shall deal with the question of appendicitis first because of the almost absolute uniformity of opinion, as expressed by my correspondents. Of the entire number, each expressed himself in favor of immediate operation when seen early. Three would wait for a day or so, if the case is seen after the expiration of from forty-eight to seventy-two hours and sixteen would not operate in the presence of a diffuse peritonitis. The consensus of opinion, however, is that the mortality rate is in direct proportion to the length of time that has elapsed since the inception of the disease and that operation should be done immediately except in the moribund.

With reference to acute cholecystitis, sixty-seven favor immediate operation, sixty-two counsel delay and four were non-committal. Of those who advocate delay in this condition, practically all advocate operation where there is evidence of severe toxemia, gangrene, threatened rupture and so forth.

As to the question of salpingitis, twenty-two are in favor of immediate operation, ninety-seven are in favor of delay and four are non-committal. From these statistics it is apparent that there is a great lesson yet to be learned.

For many years the question of how and when to deal with appendicitis was unsettled and it was not until the teachings of Murphy brought this question so forcibly into the forefront of medical discussion that the profession began to realize the imperative need of immediate operation. The arguments advanced at that time for delay in appendicitis were much the same as those advanced now for delay in the acute inflammatory conditions

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which we are here considering. It was argued that probably eighty-five per cent would recover from a given attack, operation being advised in the interval between the attacks,, losing sight of the fifteen or more per cent who would not recover without local abscess formation, peritonitis and other ills attendant upon this affection. It was from this fifteen or more per cent that the surgeon reaped his highest mortality, a mortality which, perhaps, exceeded the deaths from all other surgical causes combined. Gradually it was forced home that cases operated on within the first twenty-four or forty-eight hours, or prior to rupture, carried practically no mortality at all and then began the long campaign of the education of the doctor and the public until today it is well known to the laity as to the profession that operation as soon as the diagnosis is made is one of exceeding simplicity and without hazard. So much has this self-evident truth been recognized that, whereas in years gone by the patient was brought to the hospital only after having been practically coerced into it, now, they have only to be apprised of the diagnosis to seek prompt surgical relief.

I cannot say that I am in accord with the principle that cases of spreading peritonitis should be allowed to become quiescent and then drain. There is the strongest probability that these cases will go on to a fatal termination or that operation will be forced at the most unfavorable stage. To me, there is no greater truism in medicine than "*Ubi pus, ibi evacuo*," and the dictum laid down by Murphy that it is pus under pressure with the ensuing toxemia that is the cause of death, meets with a hearty response from the bulk of the profession. Get in and get out with the least possible loss of time and with the least amount of traumatism and, if possible, remove the appendix, as it is the *casus morbi*. We have made it a rule in the drainage of peritonitic cases to have the dressings changed, not at any stated

interval, but whenever they begin to become saturated. Drainage is capillary in its nature and a dressing that is saturated will not drain, hence, we frequently have our dressings changed every thirty minutes, or even oftener, during the first few hours after operation. We believe that by this procedure alone we have saved lives that we would have sacrificed otherwise. This, of course, is coupled with postural and other treatment. We cannot see the *rationale* of postponing operation after the third or fourth day and then operating on the fifth or sixth if the case is not progressing favorably.

In regard to acute cholecystitis, from the answers received, the profession is about evenly divided as to early and later operation, with a slight preponderance in favor of the former. Of those who advocate delay in this condition, practically all advise operation where there is severe toxemia, gangrene, threatened rupture, etc. It is true that many of these cases will recover from a given attack, but rarely will the patient submit to operation when not acutely sick, until a long train of digestive disturbances or repeated attacks with their consequent complications force him into the hands of the surgeon. The logical conclusion, it seems, therefore, would be to operate upon these cases in the first attack as soon as the diagnosis is made, just as we do in appendicitis. We all recognize the fact that most of these cases have recurrences and that sooner or later operation is practically inevitable, for, as emphasized by Deaver, all surgical conditions of the biliary tract are infectious in their origin, with the exception of new growths, and once the gall-bladder becomes the seat of infection, it is apt to remain infected until surgically drained or removed. As to cholecystostomy or cholecystectomy in acute cases, I shall not touch on this phase of the subject, for the surgeon should be guided by the conditions that exist and what his judgment tells him is best to do for the individual

patient. This much is true, however, that if we see these patients in the first twenty-four or forty-eight hours of the initial attack, it is very likely that cholecystectomy would be the operation of choice, that the mortality would be but slightly increased and that the morbidity would be greatly lessened.

It is with our dilatory methods in the treatment of acute salpingitis that I have been most impressed. The replies received concerning this question have been most diverse and most interesting, for instance, to quote one correspondent, he says, "I rather hesitate to state my views in regard to acute salpingitis. I have never operated by choice on these cases in the very early stages, but, during the last nineteen years, I have operated on eight cases under a mistaken diagnosis and found the tubes acutely inflamed, with pus oozing from the fimbriae. Realizing my unhappy position, I carefully removed the tubes and closed the abdomen without drainage. There has been no mortality and patients have made rapid and uneventful recoveries and up to the present time, the morbidity has been splendid." One very distinguished surgeon writes, "I never try to cool off an acute abdomen, but operate upon the acute salpingitis case without waiting for it to subside and cannot recall any single mortality as a result of early invasion of the abdomen in these types."

Another, while delaying operation, writes, "An immediate operation is not accompanied by a high mortality and shortens the period of morbidity materially, but, as it is the custom to wait until the acute symptoms subside, I have gotten into the habit of doing so, but I really think that it is best to operate at once and close up tightly." Still another says, "My practice is to defer operation until after the acute symptoms have subsided. The reason is, that all of the cases of gonorrheal origin that I have seen have had repeated attacks and need hysterec-

tomy. I am not convinced that the mortality would be increased or the morbidity not reduced if operation were done early in the first attack in such cases." Still others have operated under a mistaken diagnosis and carefully closed the abdomen without disturbing the tubes.

The economic aspect of this question is one that should receive great consideration. In one of the charity hospitals with which I am connected, the proportion of admissions for salpingitis to the whole number of patients both male and female, has been fifteen per cent. The statistics as to the average duration of the disease prior to admission to hospital are not at my command, but I should judge that eighteen months would not be far wrong. Of these cases many have severe complications and in the majority, hysterectomy with removal of both ovaries is necessitated. The operative difficulties that are encountered are frequently great and the post-operative complications which may result from leaving raw surfaces, impossible of covering up, are not to be ignored.

The statement is made that many of these cases will go on to recovery and that some few have had a complete restoration of function. This same statement might well be made with reference to most of the conditions which we regard as essentially surgical, but it is probable that for every one who has this happy outcome there are many, many times the number who are doomed to a protracted morbidity. Even where the function of the tubes seem to be restored, sterility is the rule, or if pregnancy occurs, there is a strong likelihood that it will be ectopic.

A report comes to me from the Charity Hospital at New Orleans that the mortality in the cases operated upon during the acute stage has been sixteen per cent. This is tremendously in excess of statistics that I have been able to obtain elsewhere, and I am constrained to believe that this

represents the mortality from operations during recrudescences of cases of old standing. Surely, I think, no one would contemplate operating during the acute stage of an old salpingitis, where adhesions are firm and dense and where there is great danger of spreading a virulent infection. Here, at least, should the acute inflammatory process be allowed to subside before attempting to give surgical relief, as practically all of the damage one expects to encounter has resulted from a prior attack. It is in the acute stage of the initial attack that I believe operation will give the greatest amount of relief with the greatest preservation of the pelvic structures. Instead of this being a radical measure, I regard it as the most conservative. Many of these cases come to us with a diagnosis of acute appendicitis, hence we see them within the first twenty-four or forty-eight hours of the attack, when the inflammation is just spreading into the tubes. We deliberately undertake operation at this stage, knowing that the operative procedure will be as simple as that for an acute appendix, unruptured, and believing, from past experience that the mortality will be no higher. It is true that the tubes are sacrificed and that a small percentage might go on to recovery but we think this is small reason for deferring operation when we are able to preserve the health of the individual at a minimum of risk. There seems to be no valid reason why all acute inflammatory conditions within the abdomen have not, underlying them, the same surgical principles. Is the lesson lost when one writes that he never of his volition operates upon an acutely inflamed tube, and yet, when the abdomen is opened through a mistake in diagnosis the tubes are removed and the patient makes a speedy recovery without subsequent morbidity? Does or should this not teach us that those cases which come to us so early as to be confounded with an acute lesion of the appendix or

other acute diseases of the abdomen, should have the benefit of operation when all of the pelvic organs except the tubes can be preserved in this entirety? If this be true, then it is time that we should begin a campaign of education to teach that the *bete noir* of surgery is delay. The doctor and the laity should be impressed with this one fact; that persistent abdominal pain is practically always an indication for surgical intervention, the colics being excluded, and that those conditions which will likely come to operation sooner or later had very much better come sooner than later. The principles of surgery will always remain the same and he who attempts to formulate varying rules of procedure for conditions fundamentally identical often finds himself lost in the mazes of uncertainty.

The annals of medical literature are filled with pleas for the early recognition of this, that or the other condition; we have stood aghast at the inroads made by some of the more virulent infections in the space of a few hours, yet, notwithstanding the fact that we have proclaimed our warnings from the housetops, many of us have elected to single out a disease which is left to work out its ravages unmolested by us. Let us meet the issue with the courage of our convictions; that custom should govern our actions when at variance with our own opinions, is to be untrue to ourselves and to the profession, whose votaries we are. Too often before has the pendulum swung, and the dictum of yesterday become the fallacy of today, and the status of no disease can be regarded as settled which is sending to our charity hospitals in the South from ten to fifteen per cent of their total admissions, there to be subjected to mutilating operations. The possibility of a restoration of the procreative function is a sentiment, the certainty of disaster in the vast majority of cases of salpingitis is a stern reality; let us face facts, not fancies.

DISCUSSION OF PAPERS OF DR. HIGHTOWER AND
DR. BARKSDALE.

Dr. S. H. Hairston (Meridian): Dr. Barksdale was kind enough to send me a copy of his paper before this meeting, as I requested him to do. It struck me so forcibly and as there were a lot of things that I wanted to say, for fear I would leave some of them out, I wrote what few remarks I want to make.

I know a good many of you are going to differ with what I have to say, but I am like Dr. Barksdale. I think if you live long enough you will be eating out of my hand.

I am sure we all enjoyed and appreciated Dr. Barksdale's paper. We can see that he is thoroughly convinced about some things. I honor him for his convictions. I have always adopted the plan not to be cocksure about anything. We can never tell which patient will get well, whether we operate or not. Generally speaking, I preach it is better to operate early on ninety and nine cases through a mistake than to let one go too late. The mortality and morbidity is reduced. The patient is soon able to return to work and he or she becomes a producer instead of a consumer only.

When to operate is still an open question on which the greatest minds of the profession differ. I will not try to settle it here today nor to discuss it. My own personal practice is to operate in most cases as soon as the diagnosis is made. I believe we save lives by it. However, good men claim that pelvic infection has almost gotten to be a non-surgical disease. The tendency nowadays is to treat the patient and not the disease.

I want to direct most of my remarks to drainage. I want to ask the question: Why do we drain? The old adage, "When in doubt, drain," no longer holds good. It is rather the reverse. Why do we lance an abscess? Is it to get rid of the pus? Not entirely. Is it to get rid of the infection? No. The infection is not in the pus mainly. It is in the abscess walls and cannot be reached. It relieves tension only. By lancing you do not hasten the termination or destroy the infection. I contend that by removing the pus by lancing and squeezing, you extend the infection and lengthen its duration. The pus that remains after the infection has passed is nothing more than an inflammatory residue. It is a protein as well as a vaccine and an antitoxin combined.

Let us apply this to the abdomen. We know that bacteria create a toxin that is destructive and fatal to themselves. We know too that bacteria in pus do the patient no harm. They are either dead or sick. Unless they are active they create nothing. Those that are sick have to be transferred to new and fertile fields to revive. The only bacteria

doing harm are those imbedded in the peritoneal wall or surfaces. No amount of drainage, washing, or sponging is going to remove them. They can be destroyed only by the natural immunity of the body and by the toxins of their own manufacture. By draining out or taking away this pus and these toxins, the bacteria are allowed to thrive unmolested and their growth is favored until overcome by the natural body immunity.

Dr. Barksdale spoke of changing dressings very frequently in the beginning, or as soon as they become saturated. He said saturated dressings would not drain. I gather from this that he is changing the dressings for drainage. I change the dressings as often as they become saturated, but not for drainage. In pus cases, I put in a small split rubber drain down deep in the pelvis. I do not put this to the bottom for fear of pressure perforation. I put this in to allow fluids to escape and to relieve intra-abdominal pressure and thereby helping blood and lymphatic circulation. No tube is going to drain the abdominal cavity more than eight hours. By doing as little as possible, producing the least amount of trauma, few or no adhesions are going to form. The chances of intestinal obstruction are lessened to a minimum.

All of you will agree that injections of sterile milk, intravenous therapy, and vaccines have no place in the treatment of this condition. Vaccines are dead bacteria and the body has enough of these already. Any specific therapy given with the idea of destroying the bacteria is worse than useless. Treatment directed toward sustaining the body resistance is the only one of value.

Put the patient in the Fowler position; give morphin for pain, water by mouth and rectum, salt and glucose solution by Matas' drip, frequent use of the duodenal tube if necessary; absolute quiet in bed, with a good nurse; and a very large per cent of your cases will get well. I have lost only three cases in the last six years. Two were small children with a gangrenous appendix and the other was a large woman with a Neisserian pus tube who developed pneumonia.

To carry out the ideas I have expressed requires unlimited confidence and a world of faith. The temptation to wipe out all the pus and put in multiple drains is great. To stay your hand requires good judgment and good control. To see all of your peritoneal infection cases get well is a good faith tonic and it at least makes us feel that we are not doing the patient harm instead of good. We can feel, too, that we are not taking from our patients one of the great weapons with which to fight disease.

Dr. A. G. Payne (Greenville): I hold in my hand a rare book—the transactions of the Missis-

Mississippi State Medical Association many years ago. Recently I thought of a paper that I heard a great many years ago, in fact twenty-four years ago in Jackson, by one of our then Mississippians, but now ex-Mississippian, and one of the best surgeons in the whole South.

In reference to infections in the pelvis he says (and this is his closing remark on a valuable paper at that time): "Kelley expresses it as a saddle-back on both sides. In all such cases, gentlemen, we have removed both tubes and both ovaries. The number was sixty-four cases and we are thankful and even proud to say that we have had no deaths in this number."

There are sixty-four cases of women who have gone the usual route, brought about by men who operate in the acute stage.

There are few men who have enough nerve to come out leaving the patient intact after a mistaken diagnosis—a mistaken pelvis infection for an acute appendix, for example. I maintain there are too many women denied motherhood. We all learn, as Pollock says, by our mistakes.

There is one thing that Chapman said when he was in New Orleans a year ago. He said, "The best surgeon today is the man who lessens surgical conditions." I don't think a greater truth than that has ever been uttered.

I am reminded of something one of my associates told me recently. He said, "I have seen you treating people in your office whom, years ago, I would have treated in the afternoon and operated the next morning."

I started to think about that. I talked to Dr. Crawford along the same line. He said that recently he had his stenographer go over a list of patients who had been in the office, and I think about eighty-five per cent of those patients, years ago, would have been operated on.

Gentlemen, we are coming to the idea of lessening the amount of surgery. In a great many cases if we take stock of our case and find it is more than useless, we can then direct our endeavors to something more beneficial to the patient.

A few years ago I had an experience with an acute gall-bladder lesion in my own daughter. She had had gall-bladder trouble for over a year. I let her go to Europe with that gall-bladder feeling that possibly she could get along for a while with it. After she came home she had a severe attack. Morphine would not relieve the pain. It was in the cystic duct and the pain could not be relieved. It was in the cystic duct and could not be relieved by morphine hypodermics. We gave her chloroform almost constantly. Her blood count was 30,000. I didn't know what to do.

She said, "Dad, take me to the hospital and operate on me now."

I said, "You can't stand it, my dear child. Now would mean death."

We must realize that in a good many of these acute conditions which will submit to operation, if that patient dies, that is just one more death. But, gentlemen, if we had to face the funerals in a good many instances, we would stop operating on those acute conditions.

Dr. J. C. Cully (Oxford): I have listened with a great deal of interest to these two papers. I have followed Dr. Barksdale very closely for the last five years. I noticed in the résumé, the replies from various sources over the country on the paper which he read before the American Medical Association on this subject were mostly from surgeons from the North. We of the South see a different condition of pelvic infection from that in the North. Most of these cases are gonorrheal infections. I feel that I would be perfectly justified in following a man like Dr. Barksdale rather than following those men who have given such varied opinions.

In other words, where are we? As Dr. Hightower said, some say drain, some say don't; some say take out an acute pus tube, some say leave it in. I believe every case is a law unto itself and we have to treat each case as we see it at the time of operation.

I have operated on five cases of acute salpingitis. All of these patients had pus exuding from the tubes. I did a salpingectomy in every case and every case had an uneventful recovery. Those cases were not castrated, because castration means removal of the ovaries. Why remove the ovary? If there is any reason for removing the ovary, then castrate.

I believe if you have acute gonorrheal infection with pus pouring from the extremity of the tube, you are going to have a tube which will never function afterwards, so why not remove that just as you would an acute appendix or any other condition?

I will admit that at least three of those five cases were mistaken diagnoses. They were operated on for acute appendicitis. I didn't do as Dr. Barksdale did. I simply came clean with the patients. I told them that I made a mistake in the diagnosis, but that I operated as I should have and explained the matter to them.

I have one question to ask concerning drainage. How long does drainage serve its purpose? Some say six hours, some say eight, and others say twenty-four. Drainage serves its purpose only six or eight hours.

I want to make one suggestion in regard to Dr. Hightower's tubes. If he is going to use tubes, all right. Sometimes I use a lot of rubber tissue rolled together. Sometimes I use a cigarette drain by taking a soft rubber tube drain and slipping it into the small rubber tube.

Within the first six hours after you institute drainage, in order to prevent the very thing that Dr. Hightower said you might have, simply take a No. 10 to No. 14 catheter and slip it into this tube which has previously been split. My tubes are not nicked at the bottom like this. The tubes which I use are simply round tubes, split all the way down.

Within six to eight hours I slip a sterile catheter to the bottom of that tube, pick up the catheter with an artery clamp, hold the artery clamp so the tube can't slip out, and slip the tube off over it. Then you have a tube that is down to the pocket of the pocket which keeps the bowels from closing in. The next morning, slip it in this tube and the next morning slip it in this one. Within three days you have all your tubes out and a little catheter placed in each pocket which you can leave there. Usually within one week's time I have all of them out and the wound is healed within three weeks' time.

Dr. Augustus Street (Vicksburg): Gentlemen, in listening to the discussion of these papers it would sound as if we didn't know anything, especially when one man gets up and says one thing and another man gets up and says just the opposite. We do know something. We have had some experience and we can learn from experience. We know when a patient is desperately sick. We know when they are getting better, and we know when they are getting worse. We know from experience (this is not opinion) that acute pelvic inflammatory conditions, especially those that haven't formed large masses, will promptly clear up with a little palliative treatment, little rest, an ice bag, and so forth.

I do not say that it is going to kill them if you operate. I just say that it isn't necessary to operate on acute pelvic inflammatory conditions.

If an acute gall-bladder case comes in, usually in a man around forty years of age, and you don't know much about him except that he has an acute gall-bladder, you can observe him. If he is in a desperate condition, and his doctor has been giving him morphin for three or four days and his pain is not relieved and he is going from bad to worse, you can go in under local, tap his gall-bladder and relieve him. All of us have done it, and usually with good results.

If a man comes in who has symptoms in the region of the gall-bladder, apparently gall-bladder

colic, and you refrain from giving him food and give him glucose in the vein and lavage his stomach for vomiting and you see by his blood picture and general condition that he is improving, there is no objection to letting him improve a little bit. Then when he gets in condition you can do your operation, because in an emergency puncture of the gall-bladder you don't see in the abdomen and you may see things when you can go in there that you would like to do but dare not in a man who is desperately ill.

I say that we do know something about these propositions. We probably are not so very far apart in our opinions. It is merely usage, that which we have learned by experience and observation of our cases and governing ourselves accordingly.

Dr. T. B. Sellers (New Orleans): I want to say one word about operating on pelvic infection or salpingitis. I have at least ten cases that had a definite Neisserian infection of the tube who have given birth to children, all occurring in my practice. Neisserian infection is not necessarily a surgical condition. I believe eighty per cent of them will get well without surgery. It is a medical condition and it is only a surgical condition when cleaning up the adhesions or dysmenorrhea. Relieve the adhesions and leave the patient alone, but a large percentage will get well without abdominal section at all.

There is one other point. If you go into these cases of salpingitis, very frequently it is unilateral. Are you going to take out the one tube involved and leave the other, or are you going to take both tubes? The chances are if you leave one tube and she has an infection in the cervix, she will get the other tube involved.

From my standpoint, I would say that a Neisserian infection is not a surgical condition. I think it is a medical condition and I agree with Dr. Payne. I believe that gynecology is as much a medical specialty as it is a surgical specialty.

Dr. J. W. Barkdale (Jackson): With regard to the surgical phase of salpingitis, in some hospitals there is a mortality of fifteen per cent in those not given surgical relief. One has only to look into a great many of these cases to see the tremendous amount of damage that has been done by an inflammatory condition of long standing (in some it looks as if plaster paris had been poured in), and the great morbidity in those patients in which it has been existing for a long time, to be convinced of the fact that had that patient been operated on at an early stage when the tubes could have been removed, just the same as removing an appendix, the patients would have been well.

I don't know how many cases there are that have had a Neisserian infection which the doctors have let run on and on. The mortality rate in children in the later stage is not over four per cent. When you do an early operation, you are trying to save that patient from the long train of ills and evils and suffering that follow an inflammatory condition that has spread out over the entire pelvis and eventually lead to the thing that Dr. Payne is trying to prevent, not only castration, but the effect of hysterectomy and the dangers attending that tube. When you operate early (I mean within the first forty-eight hours) you have absolutely nothing to encounter but tubes.

In answer to the question asked by one doctor, we always remove both tubes, because where there is one tube infected there is nearly always going to be another. This is done without any hazard to the patient, without any of the ills attendant upon a more difficult operation, and we feel we have conserved the health of that patient in doing so. We never touch the ovaries. Why should a doctor castrate a patient because of a tubal infection? We are dealing with a tubal condition and not an ovarian condition.

I was very much gratified with Dr. Cully's discussion in that he is following the same procedure as I. One of the doctors in discussing Dr. Payne's paper emphasized the same thing.

As I said, twenty-two per cent of those to whom I wrote (most of whom were in the North, but some of them living in the South) are doing an immediate operation, notwithstanding the fact that the dictum has gone forth that this is a settled question. It is not a settled question. As long as men doubt, the question is not settled.

Some of the doctors, Johnnie Erdmann and Robert T. Morris, men of that caliber, wrote letters that would burn you up because of the fact that we should try to discriminate between these conditions as you would between any other acute inflammatory conditions.

My personal belief is that nearly all inflammatory conditions in the abdomen are essentially surgical by nature.

I am going to touch briefly on a few cholecystitis cases. If you operate in the early acute stage, nearly all of these are loosely attached to the liver and they separate very readily and you can remove them without draining. If you let that man get into a dying condition and then want to operate, your mortality is going to be higher. There is no mortality from early operation in any abdominal

condition. Of all the men who reported to me as operating early (within twenty-four hours), there was not a single death.

Dr. Shands spoke about operating on a girl three years of age. The first man I saw do an elective operation for salpingitis was Dr. Shands. That was two or three years ago. He never had any trouble. Why? Possibly because he understands the technic.

Merely for the reason that a patient may have a child does not outweigh the deaths that would accrue from later operations? Does that outweigh the tremendous amount of damage that has been wrought by salpingitis? That is a sentimental reason to postpone operation because of the fact that the woman may have a child, when the chances are she may not have one. She may not want any. Of course, we are not operating because people do not want children.

As I said before, you are dealing with a hypothetical question. You are placing an actuality against something that may or may not happen.

In my paper, the fundamentals of surgery are the same. I still say that I am going to operate regardless of what the case may be. It may be an acute salpingitis, an acute obstruction, an acute appendicitis, an acute cholecystitis, or what not. The man who puts off operation under these conditions and waits until operation is forced is going to have a higher mortality and a higher morbidity than the man who operates early.

Dr. Street said they may cool off. How do you account for this vast number of cases entering our charity hospitals all the time, and for that matter our private hospitals as well? It means that the great majority of them do not cool off as he intimated they would. We might apply the same reasoning to acute appendicitis. Eighty-five per cent of them will get well without operation. We know that. Why operate? Why not cool it off until you are forced to operate and then have the patient die? We have gotten away from that.

Just as surely the trend of thought is moving in the other direction and the time is coming (and I make this prophesy) when they are going to operate early in all of these cases.

Dr. C. C. Hightower (Hattiesburg): I agree with Dr. Hairston that the great majority of doubtful cases will be taken care of without drainage, but I believe the convalescence will be more tardy, the adhesions will be greater, and the outcome will be more doubtful. I believe that when a large amount of exudate is pouring out if it is not re-

moved it results in the formation of adhesions, due to the absorption of the water from this material, leaving the fibrous products there. In other words, I believe if proper drainage is removed at the proper time you will have a great many less adhesions than you would have if you did not drain at all.

With regard to what Dr. Cully said about cigarette drains, why fool along with cigarette drains and rubber tissues when, if you leave a big opening there by rubber tubes, the abdominal pressure will pump out the fluid, not in drops but large streams? He is arguing against his own point. He said that drainage was good for about six hours only. If it is good for six hours, make it very good. Don't dam it back at all. Let it come out freely. It certainly will not come out with the use of rubber tissues or cigarette drains. They will close in and prevent free exit of the exudate.

INDICATIONS AND CONDITIONS FOR CESAREAN SECTION.*

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There are two groups of indications for cesarean section—absolute and relative. The absolute indications is contracted pelvis. Relative indications are largely based on general conditions such as accessibility to a standard hospital and qualified surgeon and assistants. Among the important relative indications are the following:

Placenta previa, at or near term, with the mother in good condition, no infection, child alive, placenta central or largely covering os. An example of such a case is that of Mrs. P., age 35, a multipara, who was seen March 8, 1929, with a pulse of 170 before operation, bleeding, and whose baby was dead before the operation. The mother is now living and well.

Abruptio placentae is an indication for the operation when the birth canal is totally unprepared and the woman is in a hospital or can reach one in time.

Eclampsia, at or near term, with the birth canal unprepared and the condition of mother and child will permit. In such

case, the ease and speed of cesarean section as compared to hours or days of waiting for normal or forced dilatation, naturally makes it assume a very much more important place in the treatment of this condition than a few years ago. As an illustration, Mrs. B., a multipara, with a blood pressure of 230, was seen, unconscious, on February 14, 1929, with the urine containing casts and albumin. She was promptly operated upon so that the mother and baby are now living and well.

On October 14, 1928, Mrs. T., had had two convulsions; her blood pressure was 195; she was conscious, and the urine showed casts and large amount of albumin. The operation undoubtedly saved the life of the mother and child.

Habitual death of fetus in labor, when not due to syphilis, in cases where one or more babies have died during labor and the parents are desirous of a living child, comes to be almost an absolute indication provided the mother and child are in good condition. Two such cases are recorded here:

Mrs. S., aged 40, a multipara, had three previous labors with dead babies. She then had a cesarean section. The operation was successful and the mother and baby are now living and well.

Mrs. C. W., aged 35, weighing 260 pounds, was in labor two days with the membranes ruptured. After the operation, the mother died on seventh day of peritonitis; the baby is now healthy and active.

Uterine tumors, large and interfering or making delivery impossible, in which condition cesarean section is the operation of choice provided the woman is in good condition, not exhausted from labor, there is no infection, and child is living.

Rupture of uterus, early and beginning, if the mother's condition is good and the baby is living, cesarean section is a choice procedure almost without regard to dilatation, furnishing a means of closing rupture.

*Read before the Section on Surgery at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 15, 1929.

December 19, 1928, Mrs. B., primipara, came to hospital for cesarean section as uterus had ruptured after being in labor 36 hours. Mother and baby are now living and well.

Congenital deformity of vagina, where delivery is impossible, cesarean section with hysterectomy is the operation of choice. This, of course, is a rather rare indication for cesarean section.

Mrs. K., age 20, primipara, had this lesion. She was operated upon and mother and baby are now living.

In certain tedious, difficult labors, with excessive size of fetus, cesarean section is to be considered. In fact, with the increasing numbers of well equipped hospitals and well trained surgeons, this operation assumes a more important place in major operative procedures. The relative safety to both mother and baby is responsible for the fact that this operation is looked upon more and more favorably from year to year.

SUMMARY.

The operation done in these cases was the abdominal, with incision just to left of median line, the navel being the center.

In cesarean section, the condition essential for the maximum safety of the mother are: (1) Good general condition; (2) absence of marked labor exhaustion; (3) unruptured amniotic sac; and (4) an uninjured and uninfected birth tract.

With the mother in poor condition, with a ruptured bag of waters, even though there may be infection, it will be found at times that a cesarean section is the operation of choice, with the consideration of a hysterectomy at the same time.

DISCUSSION.

Dr. J. P. Wall (Jackson): I think the essayist is to be congratulated on one thing. He had a short paper.

I do not know anything in the ordinary run of affairs that is easier to do than a cesarean section. From the standpoint of facility of accomplishment,

celerity of action, and the melodramatic appeal to the average layman, it is a corker; but, gentlemen, aren't we doing too many cesareans sections? The doctor says there is one absolute indication and that is disproportion between the passage and the passenger. He is absolutely right. Then he gives some relative reasons. They look to me as though they are far distant customers and especially the eclampsia.

Two years ago the New Orleans Medical Society made a review of the cases of cesarean section in the New Orleans hospitals. The Charity Hospital gets the class of cases in which they have to do 1.2 per cent of their obstetrical cases by hysterectomy. The Presbyterian Hospital did 5.4 per cent. When you stop to consider statistics the world over which show that an eclampsia in the best clinics will run anywhere from 1 to 3 per cent in a thousand deliveries, it looks to me as though we are doing too many. We all have a misconception of how it originated. We all think of Caesar as being the first cesarean section. It is not true. In Caesar's time, only women, who it was known would die, were delivered through cesarean section. A Swiss has written that midwives worked for two days on his old lady and he finally did a hysterotomy and delivered a large child and the woman lived. Only fifty years ago a missionary in Africa saw a native perform a cesarean section, using banana oil in a dual role of antiseptic for the mother and child.

Cartier in the last century said that up until his time not a single cesarean section case in Paris had lived. Bach in Vienna said the same thing, but in 1877 when Caro came along with his supravaginal amputation of the uterus, and then a few years later Sina with his suture to control hemorrhage, and Lister with his work, they made it a comparatively simple thing from the surgeon's standpoint.

Coming back to eclampsia, statistics of these hospitals in New Orleans show that in charity hospitals, out of sixty-nine cases of cesarean section for eclampsia twenty-five of the mothers died. In the Johns Hopkins Hospital, the maternity mortality in the eclampsia cases is 30.8 per cent. In the Lying-In Hospital of New York City, they had a maternity mortality of 44 per cent up to 1926. Since 1926 they have been using, and using consistently, the Karanoff method in the charity hospital.

In Dr. King's article, which was recently published in the *Journals*, covering his last thirteen cases of eclampsia treated by his service, four of the babies were dead on admission, two babies died from delivery, seven were delivered healthy, and all thirteen mothers lived. Gentlemen, I contend that where you can get one hundred per cent

mothers living, it is a darned sight better to take the majority of ten per cent for mortality the country over.

These cases in New Orleans showed that the average duration of gestation was five and one-half months. Over twenty per cent of the cases were premature cases and those premature cases showed five and one-half months of gestation.

* I would say that there is not a half dozen men in the crowd who know how to use a pelvimeter. You talk about the lying diameter and the width diameter of the pelvis, and you probably should remember eleven, twelve, and thirteen centimeters. But you do not do it.

These were indications given by patients as reasons for requesting cesarean section. One patient did not care to go through labor; another woman had an acute arthritis of the left ankle. Of all the cases that were called because of pelvimeter measurement, only one out of ten was measured.

Therefore, gentlemen, I contend that cesarean section, as the doctor said, is indicated in the contracted pelvis, just a minor pelvis, where the disproportion of the passage to the passenger makes delivery impossible. But I do not believe, in the face of the figures that are shown by Karanoff and those shown by Dr. Williams of Baltimore, in a modification of this treatment. It is justifiable, however, where you can reduce the mortality. Karanoff reports 269 cases of eclampsia treated, with 2.4 per cent mortality. You cannot beat it.

Dr. H. R. Shands (Jackson): Five years ago I read a paper before the Obstetrical Section of the Southern Medical Association at New Orleans advocating the free and rather general use of cesarean section in the treatment of eclampsia in selected cases. It happened that there were four correlated papers so that when the discussion opened eight obstetricians discussed this paper before any surgeon got a chance to discuss it. Everyone was thoroughly against me; nobody said a word in my behalf. I was drugged, but not convinced. I have thought about this matter carefully since. I now stand before you with the names and addresses of seventy-eight patients who have been operated upon at the various hospitals in Jackson during the past six and one-half years for various reasons by cesarean section.

Forty-one of those cases had a serious pre-eclampsia toxemia. Two of those cases died—a mortality of less than four per cent.

I think Dr. Wall was referring to Stroganoff. He did report cases better than those reported from Europe. I have seen no rate lower than four

per cent, which we have had in a limited number of cases. Of the forty-one cases on which cesarean sections were done, there were fifteen cases of bleeding at or near the full time, without any mortality whatever.

The only favorable comment at all in the discussion of my paper which I read, which was discussed by obstetricians, was made by Professor B. C. Hirst of the University of Pennsylvania, who said that he conceded the argument presented was all right, that it was a conclusion but it would not work. I now say that it will work if it would work in forty-one cases in the hospital at Jackson, cases which were not in my hands at all. It is working pretty well so far with us.

Until the last year, if you consult the literature as to the treatment of eclampsia, the consensus of opinion was overwhelmingly against the use of cesarean section. I want to read to you two paragraphs from a recent member of the New England Journal of Medicine. This is the Journal that took over, last year, the Boston Medical and Surgical Journal. This article is entitled "Progress in Obstetrics," by Dr. John Roff, who is a professor of obstetrics. This is what he says concerning the progress during the past twelve months in regard to eclampsia:

"From the great volume of publications concerning eclampsia, one fact stands clear: It can usually be prevented by intelligent pre-natal care. When the diagnosis of pre-eclampsia toxemia is made, the patient should be put to bed, given a low protein and low fat diet, with plenty of carbohydrates and milk and water. She should get free catharsis by means of magnesium sulphate. Glucose properly prepared and in proper dosages may well be given intravenously. It does no harm and may easily do a great deal of good.

"If such treatment is promptly followed by improvement so extensive that eclampsia is no longer threatened, the pregnancy need not be terminated; with clear recognition of the fact that if pre-eclamptic toxemia is allowed to continue for long, the pregnancy may terminate itself by fetal death or abruptio placentae. Neither is a creditable result.

"By extensive improvement is meant cessation of symptoms with a constant decrease of blood pressure at least to 140 m.m., and the practical disappearance of albumin from the urine. By a dangerously long time for true pre-eclamptic toxemia to be tolerated is meant a week.

"If, in spite of treatment, the disease progresses and the diagnosis pre-eclampsia is forced, the uterus should be emptied—the method of termin-

ating the pregnancy to be chosen with regard to the severity of the condition, the extent of the pregnancy, and hence the viability of the baby, the parity of the patient, and particularly the condition and nature of the cervix.

"If eclampsia appears, however, in spite of all, before the patient is delivered, what shall we do? Shall we deliver by cesarean section? J. W. Williams is for being conservative with Stroganoff; but DeLee of Chicago approves of section in selected cases in the proper hands; while Wilson of California, as well as Waldstein of Vienna, Llamas-Massini of Buenos Aires, Stoechel of Berlin, and Freund also of Berlin are all in favor. In recent literature the "ayes" have it. There is an unmistakable trend, among obstetricians who write, towards surgery in the treatment of eclampsia. It must be remembered that their work is done in well equipped maternity clinics, usually after careful study of the patient, and not on the mere diagnosis of eclampsia.

"Unless we have good opportunities for specialized treatment, we should keep in mind Stroganoff's excellent results, for many eclamptics are safer with morphia and patience than they are if exposed to anything but the nicest surgery and its associated treatment."

I know that no discussion has ever been more officious than the discussion of those men who believe that the safest thing to do in the uncontracted cervix in a mother having convulsion is to deliver the woman.

I presented to you seventy-eight cases of cesarean section with three deaths, and forty-one cases of eclampsia with two deaths and a mortality of 4 per cent, and I now present to you the abstract of the discussion.

Dr. Joe E. Green (Richton): Gentlemen, we want to keep the records straight. Dr. Shands in discussion of this paper asked about cesarean section and whether or not it should be done; and it seems that eclampsia gives the strongest indication for cesarean section.

Who has eclampsia? Any mother who has the proper attention in our cities and towns hardly ever has eclampsia. We give plenty of salts and cream of tartar and calomel, and if you will do the same thing you are not going to have much eclampsia.

If it is a well selected case and gives a chance to operate, of course, have a cesarean section. Men, you had better watch your step. It is the desire of young men today (and I do not blame them) to do a cesarean section.

Not thirty days ago I was called seventeen miles into the country. When I got there I found a stout, seventeen-year-old, robust young lady, in labor. There I was. The devil of it was they did not have the money to pay me, but I had to stay with it. She told me she had been in a charity hospital. There are too many cesarean sections being done in charity hospitals. She told me that a young doctor had told her that she would have to have a cesarean section, and that when she got ready for the delivery he would do the cesarean section.

I did not do anything but sweat when I was not hot, but no longer than about three days ago I received a letter from that mother stating: "The boy and me is doing fine. I am enclosing you the final ten dollars, and now the baby belongs to us."

That is the trouble. I tell you right now that we had better watch out because there are too many cesarean sections done among the practice.

I will not criticize. The doctor has brought us a good paper on that thing and he has his limitations down fine. Certainly there are cases where it is indicated but remember who has eclampsia and remember the condition under which you find them, and remember where you have the care and be darned sure you know to whom you are taking the care.

Dr. T. B. Sellers (New Orleans): Dr. Shands said that a group of obstetricians jumped on him in New Orleans and I was one of them.

I must say that our statistics in New Orleans as brought out by Dr. Wall have demonstrated to the New Orleans Obstetrical and Gynecological Society, that eclampsia is not an indication for cesarean section. We have come to that conclusion every definitely.

There are certain existing conditions, such as a primipara, with a belt line pelvis, with eclampsia, in which a cesarean might be indicated; but eclampsia itself is a contraindication to abdominal section. From the emergency arising with this and with the border line pelvis, sometimes you are forced to do a section. Never do a section or any

kind of operative procedure on any case with active eclampsia until you get the patient under control. She is already shocked beyond words, so you must use glucose in your treatment and then your operative treatment must follow.

I believe there are too many cesarean sections done. Of course we know there are too many done from our standpoint, speaking from the obstetricians standpoint of eclampsia, but in other conditions, I believe there are too many cesarean sections done. If I were in an institution and there was a question of certain abnormal obstetrical procedure versus the cesarean section in a good surgeon's hands, I would rather take my chance with my wife with a cesarean rather than an inexperienced physician trying to deliver by mechanical means. That is no reflection on anyone, because we all have our specialties. It is a known fact that men are delivering with forceps in cases of virgins every day, but that is no reason to suppose that they are more dexterous with forceps. Dr. Potter is more dexterous in doing a version than anybody in the country, and under certain conditions I should be willing to have Dr. Potter try a version on one whom I would rather use other means.

I believe there is a happy medium and that we should try to strike that happy medium rather than to jump on these cases and do a section on all of them; or get on the other side of the fence and say that we are not going to do any more sections, that we are going to try to deliver them all.

The fetal mortality and maternal mortality in the experience of all the gynecologists and obstetricians in New Orleans has been much lower since we have put in this system, and we have asked the private institutions not to let anyone do a cesarean without consulting one or two gynecologists or obstetricians.

Dr. H. N. Mayes (New Albany): I wish to thank the doctors for the discussion.

The two cases I mentioned were treated in the hospital. We had consultations and decided that it was the best we could do for the patient. I guess we will have to meet the indications as they come up. We have used forceps in eclampsia. We had one case last year and the mother and child are both living.

I thank you all.

THE USE OF IODIZED OIL AS AN AID IN THE DIAGNOSIS AND ITS USE FOR TREATMENT IN CONDITIONS OF THE FEMALE GENITAL TRACT.*

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Until recently, clinical examination, histiologic and pathologic study of the tissues removed at operation were the only means of diagnosis in gynecology. Later the uterus was inflated by means of the vaginal route to determine obstruction of the tubes by Reuben. This opened a new field. Following this, sodium bromide followed by roentgen-ray was used for locating any obstruction and thus determining the best mode of treatment for curing the sterility. This was limited because of the disagreeable reaction.

Utero-salpingography not only supplements the insufflation with gas, but frequently supplants it. In sterility, it not only informs us whether the tubes are patent or not, but also localizes the site of occlusion. Properly performed, the test outlines distinctness. More important, however, is the fact that there is apparent striking therapeutic results after the use of iodized oils by trans-uterine injection.

There is no question but that the cause of a very large percentage of all cases of sterility lies in the condition of the Fallopian tubes, and up to quite recently the Fallopian tubes, except at operations, have been a sealed book. Many women have been operated on needlessly for conditions which were frankly hopeless, and others have been refused operations which might have been helpful.

It is well to remember that although sterility is not vital in the sense that it threatens life, it is vital in the sense that it effects the happiness of the individual and of the family.

*Read before the Louisiana State Medical Society, New Orleans, April 9-11, 1929.

The peristaltic wave in the tube begins at the fimbria and passes toward the fundus occurring about 15 seconds apart and one at a time. It is easy to see how disturbed peristalsis even in a patent tube might result in the death of a fertilized ovum before uterine implantation could occur. The further the obstruction from the fimbria, the less hope that surgery will be successful. However, if near the fimbria, surgery may open a small chance for conception.

In 1914, Cary advocated a solution of collargal. Kennedy employed a 10 per cent solution of sodium bromide. Tussua and also Mocquot, in 1925, reported on the use of a suspension of bismuth. However, these solutions did not prove to be satisfactory. The most valuable work toward accomplishing roentgenological visualization of the female pelvic organs has been one with iodized oils, notably lipiodol and iodipin. In 1922, lipiodol, which is a 40 per cent combination of iodine with poppy seed oil, found to be non-irritating to the most delicate tissues, was used for the localization of spinal cord tumors. This was done by Sicard and Forestier. Previously lipiodol had been used therapeutically intramuscularly for its iodine effects. It was accidentally noted after this that opaque spots continued on roentgen-ray examination for a long time. Lipiodol is not a solution of iodine and poppy seed oil, but a definite chemical combination of these substances. It is yellow and has the appearance of olive oil. Iodipin is a combination of iodine crystals (40 per cent) and a vegetable oil. (Sesame oil). Sicard and Forrestier gave more than 5000 injections of lipiodol in various parts of the body without unfavorable results. Following the spinal cord work, iodized preparations were used in the lungs and bronchial tubes. Being used successfully by Pritchard, Whyte and Gordon in 1925, Reverchon and Worms injected the maxillary sinus and Ballock injected the lacrimal ducts. The preparation is used for

visualization of the pelvis, of the kidneys, ureter, bladder, and urethra.

Heuser of Buenos Aires, in 1925, was one of the first to employ iodized oils for gynecological diagnosis. Heuser injected iodized oil as a means in making an early diagnosis of pregnancy and found it was not injurious and did not induce abortion. On the contrary, it was ineffective when attempts were made to produce therapeutic abortion. His work has been followed by others, but so far I have seen no reports in this country. Heuser, in 1926, observed a salpingo-uterine sphincter action and a muscular contraction of the Fallopian tube by means of utero-salpingography. Roentgenological pictures showed at the uterine cornu and in the cavity of the tube a space similar to the ring produced in the pylorus, followed by the cavity of the tube in the shape of an ampulla. This ring is encountered in a state of relaxation or contraction according to the phase in which it is observed. It is observed in the terminal portion of the uterine cavity, thus explaining why the fluids of this cavity are not readily transported to the pelvic cavity. This ring closes in some patients when the horn of the uterine cavity becomes contracted. This explains why, in the presence of uterine hemorrhage, the blood does not enter the peritoneal cavity, but escapes through the uterine cavity. Heuser's findings, therefore, show a salpingo-uterine sphincter and the muscular contractions of the tube extend to the uterine cavity. It also shows that iodized oil in the peritoneal cavity is absorbed by the tube through capillary attraction and expelled into the uterine cavity through muscular contractions. Where there are remnants of placenta, the sphincter remains open, in some cases thus accounting for an ascending infection. Remnants of the placenta in the uterine cavity produce in roentgenograms a deformity of the pictures of the cavity, because of the space occupied by these remnants. On fluoroscopic examinations of the uterine cavity

filled with iodized oil one may observe when the cavity is occupied by some foreign body, that muscular contractions occur as far back as the neck of the uterus. They may be slow or energetic.

The injection of iodized oil is valuable for diagnosis and localization of submucous and intramural uterine myomata and also of intraligamentous tumors. Reuben and Benedict, with iodized oil, described three types of peristaltic motion in the Fallopian tubes. Grossenbeck and Closse believe that with aseptic technique it is a faultless diagnostic measure even in ambulatory patients, but it is better to give it to patients in bed, and it is preferable they remain in bed for 24 hours. Many other workers have visualized the female tract by iodized injections. The technic is as follows: Asepsis is rigid. The patient receives an enema the night before and another one on the morning of the examination. She is allowed a light breakfast of toast, and is prepared as for vaginal examination. It is preferable to shave the external genitals and place leggings on the lower extremities. The patient is placed in lithotomy position, being placed on the table with a bucky diaphragm and nurses are present to support lower extremities. The patient is brought to the edge of the screen. A weighted speculum is placed in the vagina, and the cervix is grasped with vulcella. It is then cleared of mucous and swabbed with iodine, then washed with alcohol. The vagina is swabbed with alcohol. A sound is introduced into the uterine cavity to determine its direction, and everything is ready for the injection. I use a modified Ultzman-Keyes urethral nozzle, a rubber tip to occlude the cervix and prevent the escape fluid into the vagina, attached to the nozzle three or four c. m. from the end. The nozzle is inserted into the cervix as far as the rubber tip. A bayonet attachment fitted to the nozzle locks the attached syringe and aids the work. A Record or Luer syringe may be used. The iodized oil is warmed

by placing the flask in hot water. This makes it less viscid and helps it flow. A 20 c.c. syringe is filled with about 15 c.c. of oil and locked to the nozzle. The weighted speculum is then removed. Patient is then pulled higher on the screen. The oil is injected slowly and steadily until 5 to 8 c.c. have been passed in. The roentgen-ray picture is then made. While the picture is being made, gently pull on the vulcella and at the same time press on the syringe so as to produce perfect closure of the os. It is well to place a small piece of gauze in the posterior commissure to prevent the possibility of oil flowing on the screen, as this would spoil the picture. After the picture has been taken, the instruments are removed from the uterus. If the tubes are patent, accumulation of the oil in the pelvis near and around the tubes will be seen. During the injection, some patient might complain of cramps, in such condition, it is well to stop the injection for a few seconds, and allow the patient to accommodate herself to the condition and continue the injection. Occasionally there is a feeling of faintness. It is well to stop the injection and assure the patient that nothing will occur. A bivalve speculum is not as good as the weighted speculum, but can be used. After a few hours, the patient feels none the worse from the examination, but it is best that she take at least a day's rest. In the cases I have injected, I have had no outward symptoms or effects. It will, therefore, be seen universally that intro-uterine injection of iodized oil is a harmless procedure, if carefully performed, even not unfavorable in ambulatory cases. Symptoms of iodism have been reported after injection. This is very rare. None of my patients have shown iodism after the injection, and urine is always negative for iodine. Traces of oil may persist two weeks after the injection, although faint traces may persist for two months. When the ostium abdominale is closed, the iodized oil remains in the ampullary portion of the Fallopian tubes. Very little absorp-

tion takes place through the walls of the tubes. Repeated roentgenograms of cases show that the tubes are first emptied and then refilled, indicating that there is a peristalsis in the tubes, and it is possible while the tube is clear at the ostium abdominale that the oil might be drained through the uterus. There is no evidence that the oil damages the epithelium in the tubes. If the cervix is not closed, the oil will flow into the vagina and produce deceptive shadows, in addition the flow of the oil from the uterus might result in the failure of the oil to enter the tubes. The pressure in the syringe should be steady, gently, and continuous. By means of roentgen-ray study after the injection, an accurate uterogram and salpingogram, visualizing the entire internal female genital tract may be obtained in which the Fallopian tubes are not occluded and if there is occlusion the location is determined, which gives information of value in the treatment of obstructive sterility, enabling one to decide as to the advisability of plastic surgery on the occluded tubes. When the oil escapes through the patent tubes it will distribute itself in the pelvis. It is readily understood that the injection should not be made in presence of acute infection, such as gonorrhea, because of the danger of the forcing the infection higher up. The patient is advised to return in 24 hours for another picture, to confirm the patency of the tubes. Oil must be demonstrated leaving the fimbriated end of the tube or found free in the pelvis to determine that the tube is open. This can be usually determined at the first picture by seeing oil droplets leaving fimbriated end of tube or being free in pelvis. The 24-hour picture is used to confirm this.

Sicard and Solal report a case of pelvic suppuration after an intra-uterine injection of iodized oil in a healthy woman, aged 30 years, who consulted a physician for sterility. Gynecological examination was negative. Iodized oil was injected,

with all necessary precautions, two days before the time of menstruation. The uterus and tubes were apparently normal. Three days after the injection a swelling of the anterior fornix of the vagina was discovered, and eight days later the woman developed a severe pelvic suppuration, with high fever and bad general condition, which kept her bedridden for two months. In all cases the patient should be told about the possible danger of infection.

Jourcho has found the injection of iodized oil has therapeutic value in gynecological conditions. That the oil produces no injury in the peritoneal cavity, and since an oil capable of slowly liberating iodine could be injected so as to reach the peritoneal cavity without entailing serious consequences that use of this substance might possibly be attended with therapeutic advantages.

Little of Montreal injected at laparotomy after pus had been withdrawn from the exposed tube, one to three c.c. of 10 per cent spirits of turpentine in liquid paraffin into the Fallopian tubes, then closed the abdomen without drainage. There were no outward effects and some of the patients subsequently gave birth to healthy children. This procedure should be attempted only after acute symptoms had subsided. If the treatment of Little gives results, it is only reasonable to believe that an iodine liberating preparation that will enter Fallopian tubes after intra-uterine injection should also give favorable results, therefore it would be better to use this route in preference to laparotomy.

Dotte and Bertrand, in 1926, were perhaps the first to suggest the therapeutic use of iodized oils in gynecology. They observed at that time that lipiodol has a powerful antiseptic action and would destroy any micro-organism in the Fallopian tubes after intra-uterine injection. They never noted any rise in temperature or unfavorable reaction, due to the injection of the oil in the presence of the acute or sub-acute inflammation. They, therefore,

suggested that the injection of the oil might prove a useful therapeutic measure early in the course of salpingitis and that it might result in early recovery and prevent tubal obstruction.

Joachimovitis observed that in two cases of profuse leucorrhea and one of non-gonorrheal endometritis there was a marked diminution of the uterine discharge after two injections.

Pierre believes there is a favorable influence on pathological process in the Fallopian tubes. Jarcho uses a monometer attached to his syringe in order to inject the oil slowly and not produce a pressure over 30 to 40 millimeters using 4 to 5 c.c. of iodized oil. If too much force is used there will be a spasm of the musculature of the uterus and Fallopian tubes producing severe pain.

As far as the use of lipiodol as an aid in the treatment of gynecological conditions, especially in leucorrhea, my results have been variable. However I believe I have had more favorable results than contrary. I have treated a number of specific and non-specific leucorrhoeas with lipiodol injections of 4 to 5 c.c. at 7 to 10 day intervals, and in some cases I have received very good results, and in others no benefit. If other pathological exist, we cannot expect results with this treatment.

I have used this treatment associated with the other usual treatment in children with specific vaginitis. Injecting the oil into the vagina daily, and keeping the child quiet for at least an hour after injection. I believe that my cases so treated have been of shorter duration, improved quicker, and discharge cleared sooner.

I have had two striking results in the treatment of apparently simple agglutinated tubes. One is a woman who had one child, forceps delivery, and apparently an infection following delivery. She was in bed one month with fever. She lost her baby and was anxious for another.

She had been curretted, dilated and even a stem pessary introduced, and left in for three months, all with no avail. About two years ago, after the last surgery, I injected her with lipiodol, and both tubes were patent. She became pregnant immediately after injection, for she did not menstruate again until after delivery. She delivered a 9-pound boy in the usual time, and normal delivery. I had a second patient that had been married 7 years and never been pregnant, and following injection, she immediately became pregnant, and delivered an 8-pound girl in the usual time. I believe that the oil opened probably agglutinated tubes and paved the way for the pregnancies.

I have been able in a number of my cases to demonstrate the tubal-uterine sphincter, described by Heuser.

SUMMARY.

1. Consensus of opinion of the injection of iodized oil into the female genital tract is entirely safe and harmless, and a valuable aid in making gynecological diagnosis.
2. Utero-salpingography gives a picture of conditions that may be found in the female genital tract.
3. It tells whether tubes are patent or not and localizes the sight of obstruction.
4. There is a definite sphincteric action at the uterine cornu.
5. Trans-uterine injections of iodized oil has definitely therapeutic advantages in sub-acute and chronic conditions of the Fallopian tubes.
6. In sterility cases where the tubes are affected, it is possible to locate and determine the character of the obstruction and indicate operability.
7. When several masses are palpable in the pelvis, it will differentiate the uterus from the other masses.

8. When the pelvis is blocked by one large mass, it can be found whether the tumor originated from the ovary or uterus.

9. In cases in which a foreign body is suspected in or on the outside of the uterine cavity.

10. In differentiating from chronic appendicitis and right salpingitis.

11. In indicating the size of the uterus, by determining whether the cavity is encroached upon by any mass, fibrinous or carcinoma.

12. The test is simple, but strict aseptic precaution must be taken.

13. There is a field for use of lipiodol in treatment of condition of female generative tract, especially leucorrhoeas, and I have had two remarkable results in apparently agglutinated tubes, pregnancy following its use.

REPORT OF CASES.

1. Mrs. W.; aged 32 years, married 9 years, had never been pregnant. She came to the office complaining of primary sterility. There was a history of an operation 10 years ago for appendicitis. A bimanual examination revealed the cervix in good condition. The os was open, the uterus pulled to the right, and adenexa not palpable. The uterine cavity was injected with 6 cc. of lipiodol, showing the triangle portion of the uterus pulled over to the right. The tubes were patent, and the oil dripped out of the os abdominale. Both tubes were tortuous. The left tube seemed to be the longer.

2. Mrs. F. C.; an Italian girl 24 years of age, married 4 years, came to the office with primary sterility. She had no discomforts, suffered at menstrual time. A bimanual examination revealed the uterus in normal position. The adenexa were not palpable. The uterus was injected with 7.5-cc. iodized oil. It showed from the picture that the canular had been passed well up into the uterus. The triangular portion of the cavity could easily be outlined. It was regular, and showed that the oil drained very slightly into the tubes. The tube was obstructed at the uterine junction and especially a small part of the right tube can not be noted at the right horn.

3. Mrs. A.; married 6 years, aged 28 years, reported to the office with a primary sterility. The cervix was anti-flexed. The uterus was in

good position. The adenexa were not palpable. The canular was again shown well into the uterus, and 7 cc. of oil injected. The uterine cavity was definitely made out, triangular in shape. The tubes were patent, and oil was leaking in the peritoneal cavity.

4. Mrs. W. D.; aged 24 years, married 6 years, reported with a primary sterility. The cervix was normal, os was patent. The uterus was apparently pulled to the right. Six cc. lipiodol was injected. Triangular cavity was well discerned. The uterus was pulled to the right. Both tubes were patent. There was free oil found in the peritoneal cavity.

5. Mrs. T. J.; aged 35 years, married about 16 years, gave a history of one full term delivery, 14 years ago. The child was living, but was a thyroid deficient. The patient had a rather severe time following the confinement, running temperature, and chills, and being in bed 6 weeks. She has had frequent trouble in the lower abdomen. She reported because of sterility, being very anxious to have another child. The uterine cavity was injected with 6 cc. of lipiodol. The left side was irregular. There was a lack of filling in the left wall. This was a small myoma and could be palpated by manual examination. The right tube was completely occluded. The left tube was opened for a small distance from the uterus, being also occluded. This patient was roentgen-rayed and injected three months later, and showed exactly the same thing. She showed a definite, very small irregular uterine-cavity.

6. Mrs. W. A.; this patient reported for a primary sterility. She had been married 12 years, and was 33 years of age. The patient was injected with 8 cc. of lipiodol. She complained of some cramps during the injection, so that the injection had to be stopped for a few minutes and then continued. The uterine cavity showed irregular and at the fundus near tube there was a filling defect. A small myoma was palpable on bimanual examination. The tubes were occluded.

7. S. D.; aged 27 years, married 7 years. She had had full term pregnancy, 5 years ago. She had a very difficult instrumental delivery, but was out of bed in the usual time. Bimanual examination revealed nothing of note. Injection of the uterine-cavity of about 7 cc. lipiodol revealed the uterus to be in good position. The cavity was normal in shape, both tubes were patent, and some of the oil leaked into the pelvic cavity. The main feature in this case was that this woman was very anxious to have a second baby, since the loss of her first baby. After the

injection, this patient did not menstruate and delivered a baby a year ago. It appears that the oil opened up the tubes and allowed pregnancy to occur. She has had a second pregnancy, but miscarried, due to influenza.

8. Mrs. A. M.; married 2½ years, had never been pregnant. She was 24 years of age. History of acute rheumatic fever eight years ago. Reported to the office, complaining of primary sterility. Bimanual examination revealed the cervix normal, and the uterus slightly displaced to the left. Adnexa were not palpable. The uterus was injected with 7 cc. of lipiodol and showed the uterus to be triangular shape and pulled to the left. Both tubes were patent. The patient is now two months pregnant. Injection made 6 months ago.

9. Mrs. A. R. B.; aged 28 years, married 9 years, had never been pregnant and desired to be so. Manual examination showed the uterus pulled to the left. Adnexa were not palpable, and a small uterine myoma felt on the right side. The uterus was injected with 7 cc. of lipiodol and showed the uterus to be triangular shape and an indentation due to a myoma present. Both tubes were patent, and both cornual sphincters were visible. The patient became pregnant two weeks after the treatment, and delivered a 9-lb. girl in the prescribed time.

10. Mrs. T. W. D.; aged 28 years, married 7 years, had never had children. Bimanual examination revealed the uterus displaced to the left and a mass on the right side was felt, apparently the right tube. The uterus was injected with 8 cc. lipiodol and a normal triangular uterus displaced to the left was seen. The left tube was twisted and turned upward and the right tube was much enlarged and adhered to the uterus.

11. Mrs. V.; aged 33 years, married 9 years, had never been pregnant. Bimanual examination revealed nothing of note. The uterus was injected with 7 cc. lipiodol. Both tubes were patent.

12. Mrs. L. C.; aged 30 years, married 10 years, never had children. Operated on 6 years ago. Bimanual examination showed nothing of note. The uterus was injected with 7 cc. lipiodol. The left tube was patent, and the uterus was normal in position and shape. The right tube was occluded about the middle half. The half of the tube was removed at operation. Uterus ante-flexed. Injection one year ago, patient now pregnant.

13. Mrs. V. L.; aged 29 years, married 11 years, no children. Suffered severely with dys-

menorrhea. History of several curretments. Bimanual examination showed the uterus pulled to the right. The uterus was injected with 8 cc. lipiodol and there appeared a normal uterus in size and shape, pulled to right and ante-flexed. There appeared to be double tubes on each side. One tube on the right was adhered to the wall of the uterus.

14. Mrs. McG.; patient was 27 years old, married 2 years. She had never been pregnant. On vaginal examination the uterus was ante-flexed, no masses palpable. Seven and a half cc. lipiodol were injected. Both tubes were patent, and the uterus ante-flexed.

15. Mrs. W.; aged 28 years, married 2½ years, never been pregnant. Bimanual examination revealed the uterus in good position, but slightly enlarged. Eight cc. lipiodol were injected. The uterus was in normal position, somewhat enlarged. Both tubes were patent. Right tube rather long.

16. Mrs. J. L.; aged 29 years, married 5 years. One pregnancy, 4 years ago. Had not been pregnant since. History of gonorrhea in husband 2 years ago. Bimanual examination showed uterus fixed and tender, adnexa not palpable. Seven and one-half cc. lipiodol injected. Both tubes occluded. The right tube was occluded at the uterine end, the left at the fimbriated end. This patient operated on recently. Bilateral salpingitis. Both tubes removed.

17. Mrs. A. V. L.; 30 years of age, married 6 years, no pregnancies. Rather obese, menstruated scantily and irregularly. Bimanual examination showed the uterus normal in size and shape. Adnexa negative. Eight cc. lipiodol injected, uterus triangular, normal position. Both tubes were patent. Right tube was adherent and the fimbriated end was distended.

18. Mrs. F. K. G.; aged 32 years, had never been pregnant. Bimanual examination showed the uterus normal in size and shape. Adnexa were not palpable. Eight and one-half cc. lipiodol injected. Both tubes patent. Uterus normal in position and shape.

19. Mrs. D. R. A.; aged 34 years, married 7 years, pregnant 5 years ago. Miscarried at 4½ months. Never pregnant since. Bimanual examination showed uterus ante-flexed. Adnexa were negative. Ten cc. lipiodol injected. Both tubes patent. Uterus was ante-flexed. Ampulla of both tubes were distended with much free lipiodol in the peritoneal cavity.

20. Mrs. F. S.; aged 27 years, married 4 years, never pregnant. Bimanual examination

revealed uterus normal in position. Adnexa were negative. Eight cc. lipiodol injected. Both tubes patent and uterus normal in position and shape.

21. Mrs. M. P.; age 28 years, had miscarried twice. Had had two curretments. One surgeon advised that she had a septate uterus. About 8 cc. lipiodol injected. Showed a double uterus. Both tubes patent.

22. Mrs. A. B.; aged 26 years, married 4 years, never pregnant. Bimanual examination showed the uterus normal in position. Adnexa negative. Seven and one-half cc. lipiodol injected. Uterus normal in position. Both tubes patent.

DISCUSSION.

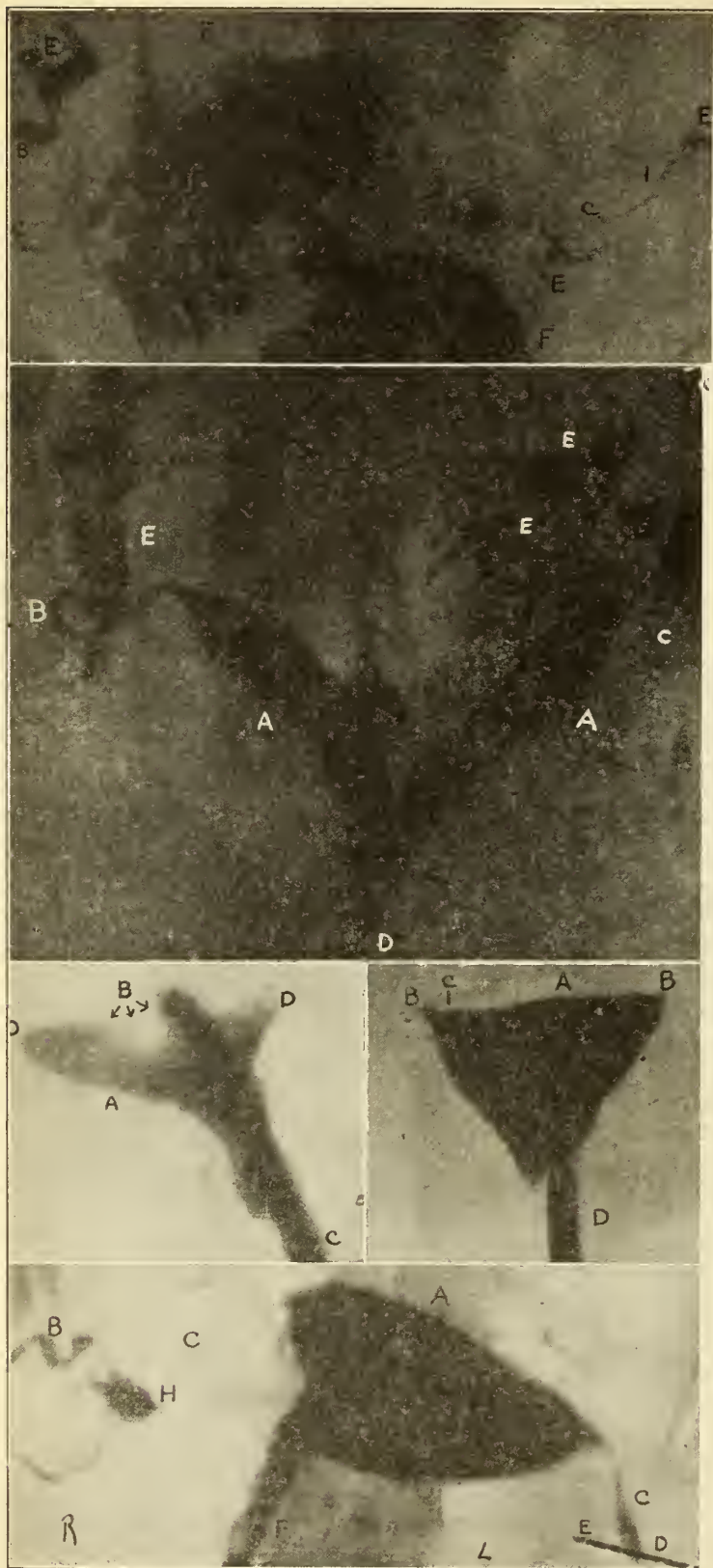
Dr. John F. Dicks (New Orleans): Iodized oil has one definite use in gynecology, the diagnosis of patency of the tubes, and it is unfortunate, to my mind, that the essayist included so much in his paper that this consideration may have been clouded over. It may result in pregnancy, in one or two instances in my own experience possibly it did, but that is not its chief concern. In my own work I feel that the diagnosis is not complete until a twenty-four hour picture has been made, to be certain that the oil either is or is not in the pelvis. Seventy per cent of tubal pathology is located at the fimbriated extremity, and the fact that oil is in the tubes does not settle the question of whether or not a woman can conceive; we have to know also whether it can get out of them. I was obliged to make a hurried diagnosis the other day on an immediate picture, which seemed to show patent tubes; twenty-four hours later I had to change my opinion, because the oil had not left the tubes. This method may assist in the diagnosis of fibroids, ovarian cysts and other pelvic conditions, but we do not need it in them. The experienced gynecologist can detect these types of pathology without any such aid. We ought to be rather cautious in advocating the general use of this method, because it is certainly going to be abused. I have in mind particularly a paper read before this section last year in which the method was advocated to diagnose pregnancy. It should be absolutely condemned for any such purpose. Nothing at all should be introduced into the uterus suspected of pregnancy. The oil should never be injected under pressure; it spreads rapidly of itself by continuity of surface, and the use of pressure is dangerous and ill-advised.

Dr. W. E. Levy (New Orleans): The use of the twenty-four hour picture should be routine; no diagnosis can be complete without it. And this society should go on record against the use of lipiodol in the diagnosis of pregnancy; about 80 per cent of abortions follow its employment,

and our seeming advocacy of it may give some unscrupulous man a cue. The Becton Dickenson Company are now putting out an apparatus with a manometer for controlling the pressure of the injection, which I think will be very useful.

Dr. Hilliard E. Miller (New Orleans): In 1926 I reported 40 cases in which I had used lipiodol, and I agree with Dr. Dicks that its use should be restricted to the diagnosis of the patency of the tubes. It may demonstrate other conditions, it may be a therapeutic agent, but just now its principal use is the diagnosis of tubal patency. In the cases mentioned, in 3 instances I injected patients with definite chronic salpingitis the afternoon prior to operation and I was able to demonstrate at operation exactly what the roentgen-ray had shown. The 24-hour picture is an important consideration; the immediate picture can be very deceptive. This method is a tremendous advance over the Rubin and similar tests, for it tells us not only that the tubes are blocked but where they are blocked. Thus it gives us an idea as to whether surgery is warranted. If the occlusion is near the fimbria, salpingostomy may be done with some hope of success, if it is near the cornua, the operation is not likely to succeed. When conception results following its use, I am not sure that the lipiodol has anything to do with it; I have seen conception follow the mere introduction of a sound to determine the direction of the canal. Lipiodol injection should not be used indiscriminately; its chief purpose is to demonstrate the patency of the tubes, and whatever else it demonstrates—and in one of my cases it demonstrated a polypoid endometritis—is incidental.

Dr. W. L. Bendel (closing): In all of the pictures referred to by Dr. Dicks, he will find that globules of oil have already passed into the pelvis, which settles the question of the patency of the tubes without a 24-hour picture. Of course if this does not occur in the immediate picture, we ask our patients to return for 24-hour examination. The main point I wanted to bring out was the usefulness of iodized oil in determining the patency of the tubes, but I believe it has other uses also. I was not advocating Heuser's employment of it in the diagnosis of pregnancy, although there may be some virtue in it. Disagreeing with Dr. Miller, that pregnancy following its use is not attributable to it, I have seen it happen in at least two instances, and one, patient had been curetted and submitted to other measures of treatment without any results. She did not menstruate after her injection, and I think this was a clear instance of cause and effect. I am sorry the time was so short that more discussion could not be brought out.



The topmost illustration is a roentgenogram of Case No. 13. Apparently double Fallopian tubes on both sides.

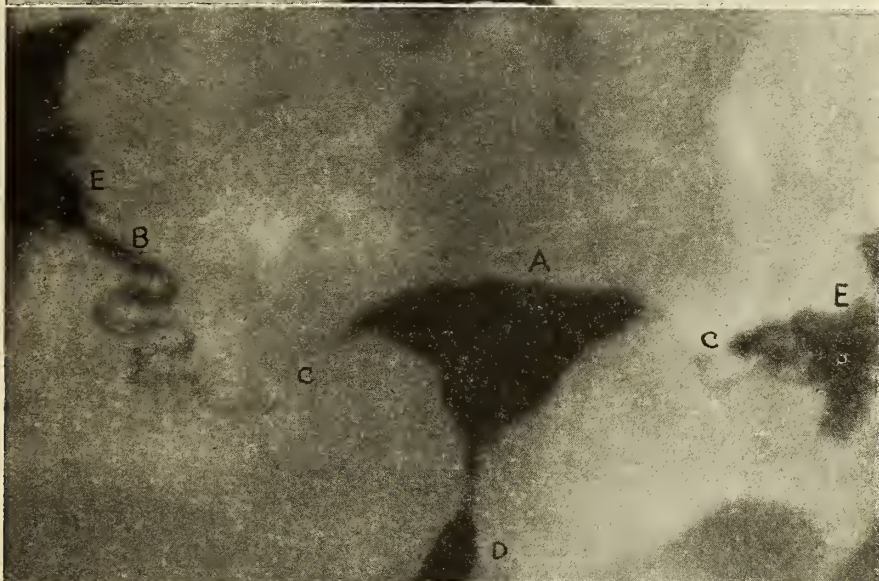
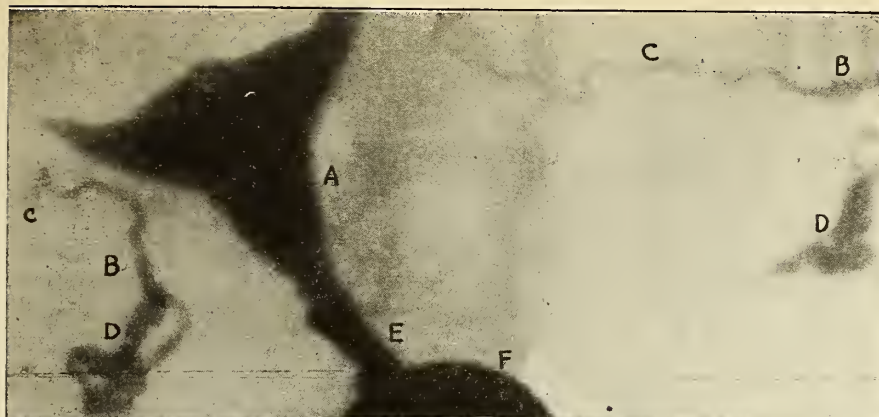
The next illustration is from Case No. 21, Mrs. P., showing a double uterus.

In these two illustrations the letter A stands for uterus, B—ampulla; C—Fallopian tubes; D—adherent right tube to uterus; E—free oil in peritoneal cavity; and F—bi-valve speculum.

The next two illustrations illustrate, on the left, Case No. 6, Mrs. W. A., showing occluded tubes and a small myoma. A is the uterus; B—myoma (filling defect); C—cannula; D—occlusion of the tubes.

The illustration on the right is Case No. 2, Mrs. F. C., showing occlusion of both tubes at uterine coruna. A—uterus; B—occlusion of tubes; C—salpingo-uterine sphincter; D—cannula.

The bottom illustration is from Case No. 12, Mrs. L. C., showing patent right tube and occluded left tube at the middle of the isthmus, the outer half having been removed in operation. A—uterus; B—ampulla; C—isthmus of tube; D—occluded end of tube; E—scratch defect in plate; F—cannula; G—rubber tip in cannula; and H—free oil in peritoneal cavity.



Topmost illustration is Case No. 1, Mrs. W., showing utero-salpingogram of uterus and tubes, both tubes being patent. A—triangular shadow of the uterus; B—ampula; C—isthmus of tubes; D—drop-lets of free iodized oil in peritoneal cavity; E—cannula; F—bi-valve speculum.

Middle illustration is Case No. 22, Mrs. A. B., utero-salpingogram of normal genital organs. A—uterus; B—ampula; C—isthmus of tube; D—cannula; E—free iodized oil in peritoneal cavity.

The bottom illustration is Case No. 19, Mrs. D. R. A., illustrating sharp ante flexion of uterus with a distended ampula. The lettering for this illustration is practically the same as the others on this page except that F stands for the rubber tip in cannula.

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GINGER PARALYSIS.

During the past few weeks considerable discussion has arisen among the physicians of Mississippi, and to a lesser degree, among the Louisiana profession where the disease has not occurred in such large numbers as in the sister State, as to the etiologic agent responsible for a peculiar type of paralysis epidemic in certain communities. This particular disorder is characterized by the following salient features: It is relatively rapid in onset, weakness of the lower leg appearing one day and then day by day extending centrally; it is associated with pain, at times quite severe; the pain is not referred and not definitely related to nerve distribution; tenderness is present over the

affected area; the weakness of the lower limbs is bilateral and symmetrical; it is progressive so that at the height of the course, walking is extremely difficult; there is a well marked foot-drop with loss of Achilles tendon reflex; the patellar reflexes are diminished but there are no alterations in the other deep reflexes, including those of the bladder and rectum; Romberg is positive but Babinski and other pyramidal tract reflexes are unaffected. The upper extremities only rarely are attacked and then but slightly. There is no evidence of a constitutional reaction at the onset, although in the one instance in which a leukocyte count was made, the cells totaled 16,000. Lastly, and this observation is most intriguing, almost all patients give a history of having drunk Jamaica ginger to excess. As a result of this usually recited tale, the newspapers of the country particularly, and the medical profession to a lesser degree have become greatly agitated about the possibility of the ginger in the extract causing the neuritis. Unfortunately for this hypothesis, the disease has occurred in children and in one physician who has never touched ginger in his life and does not use alcohol, another possible etiologic agent.

Epidemiologically the disease would seem to be an infection as it has spread from place to place. From this point of view and from the positive definite absence of any history of drinking ginger or alcohol in several instances it would seem that ginger can not be incriminated as the etiologic agent, rather it is very much more likely that some vague infectious agent is responsible for the disease, producing an infection which may be allied to, or even, poliomyelitis. The inhibition of ginger may be a coincidence, or its alcoholic content may produce such general immunologic changes as to favor the propagation and growth of the organism in the individual.

The large number of cases reported in several states would indicate prompt investigation procedures by the United States Public Health Service.

TEST FOR PREGNANCY.

The need and the importance of a satisfactory method of diagnosing pregnancy is so obvious that it does not have to be recounted. Physicians for many years have been endeavoring to develop some method, presumably a laboratory test, whereby the presence or absence of pregnancy may be determined. The Abderhalden technic is the most recent of such tests, but after being employed by numerous physicians at the expense of much time and labor it has been found wanting.

About two years ago two German observers, Zondek and Ascheim, brought out a test which from a recent report would seem to be thoroughly confirmed. The technic of the test is relatively simple, but could not be carried out by the ordinary practitioner. On the other hand, any good clinical laboratory man could learn the test and would have facilities for its application. The technic requires a collection of the morning specimen of urine, which is injected into five or more mice, each mouse receiving six injections in about a period of 48 hours. The mice are killed on the morning of the fifth day and their ovaries and uteri are examined. The positive test is indicated by the presence of corpora hemorrhagica or corpora lutea in the ovaries.

The tests seem to depend upon presence of a hormone in the urine. This hormone is not estrin, which Veler and Doisy have shown is present regularly in the urine of a pregnant woman. The original authors attribute the change produced in the ovaries to the hormone of the anterior lobe of the pituitary. Unlike the test which depends upon the presence of the estrous producing hormone in the urine, this particular reaction is positive early in pregnancy. In a report of the two English investigators,* one of whom is a full time worker for the Medical Research Council,

237 specimens of urine were examined, 126 were from women definitely known to be pregnant, and the test was positive in 122, the percentage of error being 3.2. Urine of 88 normal individuals was used as controls, and only one of these gave a positive test, percentage of error being 1.2. The hormone disappeared rapidly from the urine after delivery. In their conclusion the authors state that the results show that in the human subject tests may be carried out with some confidence, the percentage of error being low for any reaction. It would seem that they are extremely conservative in their estimation in the test, and that it could be relied upon with a great deal of confidence if the percentage of error is as small as they have recorded in their report.

THE UNITED STATES PUBLIC HEALTH SERVICE.

The variegated and multitudinous number of duties that fall to the lot of the surgeons of the United States Public Health Service are well illustrated by a recent bulletin by Surgeon General Cumming. The service cooperates and works in conjunction with practically every governmental department in the United States. Its activities in relation to the Department of State lie in the examination of intended immigrants, the issuing of bills of health to the American Counsels and the caring for destitute seamen returning from abroad. Its main duties are under the Treasury Department, but with the Department of Justice, among other functions, the Public Health Surgeon makes sanitary surveys of the water and sewerage system of the Federal penal institutions. The service provides the Post Office Department physical examinations of the prospective and actual employees and inoculates them against typhoid and smallpox. In the Interior Department the Public Health Service cooperates with the office of Indian affairs, investigates water and sewerage systems in the lands under control of this department, makes physical examinations for the Bureau of Pensions

*Allan, H., and Dickens, F.: *Lancet*, Jan. 4, 1930, p. 39.

and conducts a venereal clinic at Hot Springs. With the Department of Agriculture it has many correlated activities, including the enforcement of the Pure Food Laws. For the Department of Commerce the Public Health Surgeons practically take entire charge of the medical service to the boats and light houses under its control. To the Department of Labor it supplies examiners to determine the fitness of immigrants landing in this country. In addition to these offices for the departmental forces, the Public Health Service works with all the States of the Union in the collection of reports of the prevalence of diseases and epidemiological data in relation to the communicable diseases, as well as in a host of less important other health matters. It cooperates also with a number of societies

engaged in public health activities, such as the Red Cross, the Rockefeller Foundation, the American Public Health Association, and the Illuminating Engineering Society.

This brief survey of the functions of this particular health agency of the United States Government indicates very definitely the extremely broad scope of public health activities in which it is engaged, and the catholicity of the duties that may fall to the individual surgeon in the employ of the government.

A few of these activities are known to the general public and many to the medical profession. Were it possible to enumerate all that the service does it undoubtedly would cause wonderment and amazement that there should be so much for it to do.

HOSPITAL STAFF TRANSACTIONS

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL—STAFF MEETING

MARCH 10, 1930.

Abstract—Sarcoma of the Ovary.—Dr. H. H. Johnston.

Patient—White, female, aged 40 years, housewife, one child, aged 15 years. Admitted to hospital January 4, 1930.

Chief Complaint—Low back pain and cough.

Present Illness—Began nine months ago with dull aching continuous pain in lower part of back. Pain has increased in intensity and three weeks before admission began to radiate to lower abdomen. It was then that she noticed a mass in the abdomen for the first time. Several days later she developed a dry unproductive cough with slight pain in right lower chest, accompanied by dyspnea, nausea and loss of appetite. During the past week has experienced sensation of pressure on bladder with desire to urinate but has had no other genito-urinary symptoms.

Past History—Scarlatina and measles during childhood. Diphtheria fifteen years ago. Menstrual periods have always been normal both as to duration and cycle; no dysmenorrhea; last period three weeks ago.

Family History—Father died at age 59 of "heart disease." Mother died at age 63 of carcinoma of breasts. Two sisters living and well.

Physical Examination—Temperature 99.2°F.; pulse 90. Fairly well developed but slightly emaciated, with evidence of recent loss of weight. Over right chest posteriorly there is dullness on percussion, decreased fremitus and distant breath sounds. There is sharp tenderness over right lower abdominal quadrant. A palpable tumor extends from pelvis half way between symphysis and umbilicus. Pelvic examination shows a large smooth, firm mass, apparently behind what seems to be a normal fundus. Physical examination otherwise not remarkable.

Blood: Hemoglobin 62 per cent; erythrocytes 4,672,000; color index 0.6; leukocytes 10,600; differential leukocyte count: small lymphocytes 32; large mononuclears 3, polymorph. neutrophils 64; polymorph. eosinophils 1. Wassermann and Kahn tests negative.

Urine—Not remarkable.

Roentgen-ray examination of thorax showed homogeneous increased density over entire right side.

Procedure—Patient was treated palliatively until January 22, when about 800 cc. of amber colored fluid were withdrawn from the right lower chest. Laboratory examination of the fluid showed: specific gravity, 1.017; albumin, 4-plus; cell count 1,520; differential leukocyte count: small mononuclears 41; large mononuclears 27; polymorphonuclear neutrophils 29; polymorphonuclear eosinophils 3; no tubercle bacilli or other organisms found; cultures negative.

The next day thirty minutes of deep therapy were given over right thorax, followed by thirty minutes over anterior abdomen on January 24. One week later clinical examination and roentgen-ray revealed reaccumulation of fluid in the right lower chest and on February 1, approximately the same amount of amber fluid was withdrawn. Laboratory examination showed cell count 834; other findings practically the same as on first fluid withdrawn. Thirty minutes of deep therapy was repeated the next day over right chest.

Temperature gradually subsided and on February 18, laparotomy was done. Through a mid-line incision, peritoneum was opened and a large amount of amber colored fluid escaped. A large firm growth, about the size of a grapefruit, from right ovary, was found. Ovary was mobilized and delivered but there was considerable hemorrhage from the posterior surface of the broad ligament where the growth was firmly adherent. Ovary and tumor and tube were removed and wound closed without drainage.

Pathological examination showed large round cell sarcoma of the ovary, tube and broad ligament.

Patient was temporarily shocked from the procedure. Blood transfusion of 600 cc. was given following operation. Improvement in general condition was immediate and convalescence was normal until March 1 when patient began having low left lumbar pain. Cystoscopic examination was done on the following day and a diagnosis of hydronephrosis of the left kidney was made. This was thought probably due to the fact that the growth extending into the broad ligament had produced pressure on the ureter. Urine from the catheter of the left pelvis showed on culture gram positive staphylococcus albus.

On March 3, thirty minutes of deep therapy were again given over the right chest and six days later thirty minutes over the entire chest. Since that time the symptoms have entirely disappeared and there are no areas of increased density on roentgen-ray examinations.

There has been no recurrence of abdominal symptoms and no evidence of re-accumulation of fluid as yet but on account of the nature of the growth with evidence of metastases, the ultimate outlook is not favorable.

Abstract—Carcinoma of the Thyroid.—Dr. J. A. K. Birchett, Jr.

Patient—White female, aged 38 years, housewife, no children, no miscarriages.

Chief Complaint—Swelling in neck, sense of pressure on windpipe, and difficult swallowing.

Previous History—Seven years ago noticed a small lump in throat which gradually increased in size. In the last six months has noticed that it has grown much larger and in the last three months has had a sense of something pressing in the throat, with choking sensation. Voice has become hoarse at times in the last two months.

Never had any severe illness; occasional attacks of malaria; bronchitis last winter; no history of cardiac disease. No history of gastrointestinal disorder except suffers with constipation. No respiratory disease except bronchitis last year; has choking sensation now. Menstruates five to seven days with many clots; some cramping. Urinary history negative; no tuberculosis; no cancer.

Family History—Not remarkable.

Physical Examination—Well developed and nourished, apparently in good health. Temperature 98°F; pulse 88; respiration 18; blood pressure 140/90. Teeth in good condition. Tonsils large, hypertrophic, no pus in crypts. Neck shows large mass, size of a large lemon, in right lobe of thyroid, movable; left lobe enlarged but no lumps felt. Some deviation of trachea to left. No toxic symptoms, no tremor, no tachycardia, no exophthalmos. Heart and lungs not remarkable. Abdomen shows large mass in supra-pubic region, movable; no areas of tenderness. Pelvic examination shows cervix pushed upward; slight endotrachelitis with leucorrhea; vaginal

vault firm due to pressure of large sub-serous type fibroid uterus. Reflexes negative. Skin normal.

Procedure—A diagnosis of simple adenoma of the thyroid was made, the patient's discomfort on breathing and swallowing being due to pressure and displacement of trachea and oesophagus. Operation was advised for relief.

Under local anaesthesia, gland was exposed. The right lobe was made up of a firm mass which was easily dissected from the surrounding structures, it being a little more adherent at the superior pole, and for this reason, most of the superior pole of the gland was removed with it. Approximately three-fourths of the left lobe was taken. There was no great amount of bleeding, operation was well borne, and patient began to breathe freer as soon as isthmus and cystic mass was removed. Patient was discharged on the sixth day with wound well healed. Malignancy was not suspected. Pathological report—Adeno-carcinoma of right lobe.

Comment—The frequency of carcinoma of the thyroid according to Balfour is 1.19 per cent; according to Simpson 4. Death results in 50 per cent of cases. Carcinoma is more common than sarcoma. The simple colloid goitre is usually the type that undergoes malignant change and gives metastases. Diagnosis is generally made on the finding of a large symptomless goitre present from twenty to forty years, that has recently began to develop in size. All hard tumors of the neck in the region of the thyroid s' uld be removed. Cancer of the thyroid generally occurs in patients over fifty years. In cancer there is usually loss of weight; fixation of growth; growths are hard (30 per cent of hard growths are malignant); discomfort in breathing is due to nodules pressing on trachea; discomfort in swallowing is twice as common in malignant conditions than in benign growths; hoarseness is present in large benign growths but when present with small growths that are nodular it is another point in favor of malignancy. Immediate results of treatment are good. No radical operation should be performed after it is known that metastases have occurred. Radium may well be employed. In young adults all nodular growths of the thyroid should be

removed early, especially if there is hoarseness. Extensive radical operations are not justified as the post operative use of radium gives good results. Many benign appearing goitres may be malignant so early positive diagnosis is advisable and is obtainable only by operation.

Abstract—Femoral Arterial Perivascular Sympathetic Neurectomy for Obliterating Endarteritis with Threatened Gangrene.—Dr. A. Street.

Patient—White, male, Jewish descent, born in Poland; came to United States at age of seven years; aged 52 years.

Complaint—Painful left foot, worse at night, present for past two months. The foot is cold most of the time. General health is good.

Previous History—In 1925, the right leg was amputated for a similar condition. No venereal diseases; no typhoid fever, diphtheria or scarlet fever. No history of similar disease in family.

Examination—Temperature 98°F; pulse 76; blood pressure, systolic 138, diastolic 80. Pupils are equal and react to light. Knee jerk is present on the left. Lymph glands are not palpable. The general examination shows nothing remarkable. The patient does not appear ill.

The left foot is cyanotic. The toes are very dark, the second one more so than the others and shows a spot of gangrene at the tip, one-fourth inch in diameter. There is very slight edema. The toes are tender. The skin feels cold on palpation. The cyanosis partially disappears on elevating the foot. The dorsalis pedis pulse is not discernable. The popliteal pulse is present.

Urine and blood examinations, including blood Wassermann and Kahn tests showed nothing abnormal.

Procedure—Operation on February 14, 1930. The femoral artery was exposed in Scarpa's triangle. The adventitia was carefully dissected away from a segment two inches long. One blade of pointed scissors was then introduced under the margin of the adventitia below the denuded area and a longitudinal incision made. The same was done above. In making the upper incision, a small puncture was made in the artery. This was easily closed by suture.

Subsequent—The pain in the foot has been absent since the operation and the foot has been warm. There is still discoloration but not so marked as before. The gangrenous plug of tissue has not come away yet. However, the tissue surrounding this area looks healthy and it will be interesting to see if the ulcer will heal.

Comment—This operation was given prominence by Leriche of Lyons, France. It was first designed to relieve spasmodic conditions of the blood vessels, such as the Raynaud type of disease. Experience has shown that the procedure may also be of benefit in cases which belong to the same group as Raynaud's disease; but which have continuous symptoms instead of intermittent ones. Bernheim of Baltimore has obtained encouraging results with this operation. Adson of the Mayo Clinic has done lumbar sympathetic ganglionectomy along with removal of the adventitia of a segment of the iliac artery for the Raynaud type of disease, also with encouraging results.

TRANSACTIONS OF THE CHARITY HOSPITAL SURGICAL STAFF

The regular monthly meeting of the staff was held on February 19 last. A motion was passed that each man whose case was going to be presented at the meeting be requested to read the synopsis of his own case. It was accepted, and the deaths discussed in the future will be handled in this manner.

The Committee on Tetanus Antitoxin, consisting of Dr. H. B. Gessner, Chairman, Dr. Emmett Irwin, and Dr. Alton Oschner, made its report to the section. They drew up a synopsis of suggestions which might be followed in using tetanus antitoxin. Among them was that tetanus antitoxin should be administered to all Accident Room cases presenting open wounds. They suggested, in addition, that an attempt be made to determine the patient's sensitiveness to the serum, and outlined the method recommended by McKenzie & Hanger as the one of preference. Prophylactic care was stressed in the treatment

of tetanus cases, and the matter of debridement was the first to be stressed. The Committee recommended that the rules governing prophylaxis be framed and hung in the Accident Room. The Committee finally advised and recommended that all cases of tetanus be isolated and the treatment supervised by the tetanus committee in order that a more efficient and complete study might be made.

Following this Dr. Amos Graves presented a statistical review of the cases treated in the hospital during the past six years. Dr. Emile Bloch stressed the importance of large doses of tetanus anti-toxin at the beginning rather than small doses at intervals throughout the treatment of a case of tetanus.

The next presentation was a rather synoptic discussion by Dr. Paul McIlhenny on the "Treatment of Acute Surgical Inflammatory Conditions of the Joints." This presentation was very adequately discussed by Drs. Fenner and Danna. Dr. Fenner laid emphasis on opening the synovial cavity and suturing the membrane to the skin in cases of pus in a joint, while Dr. Danna advised that he had obtained good results by simple aspiration and the reinjection of air.

The synopsis of the first death discussed was read by Dr. Loria. The case was that of a boy 13 years of age who died following a fulminating attack of acute osteomyelitis complicated by septicemia. This case had been heroically treated, but the patient was almost moribund on admission. Positive blood cultures with many organisms were obtained, and autopsy demonstrated a number of abscesses in the liver and kidney, with infarcts in the lungs.

The synopsis of case No. 2 was presented by Dr. Jerome Landry. This patient was a negro male, 39 years of age, who had suffered with pain in the epigastrium over a period of several months. Operation revealed a small abscess, the result of an old ruptured peptic ulcer. Gastroenterostomy was done and the patient died 12 days following operation.

FRANK L. LORIA, M. D.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR.

- April 3. Pathological Conference, Hotel Dieu, 10-11 A. M.
 April 4. Physiology Seminar, Tulane University, 5 P. M.
 April 7. Eye, Ear, Nose and Throat Hospital Staff, 8 P. M.
 April 8. Baptist Hospital Staff, 8 P. M.
 April 9. Touro Infirmary Staff, 8 P. M.
 April 10. Pathological Conference, Hotel Dieu, 10-11 A. M.
 April 11. Physiology Seminar, Tulane University, 5 P. M.
 April 11. French Hospital Staff, 8 P. M.
 April 11. Medical Reserve Corps Branch School, 8 P. M.
 April 14. *Orleans Parish Medical Society*. First Quarterly Executive Meeting.
 April 15. Charity Hospital Medical Section, 8 P. M.
 April 16. Charity Hospital Surgical Section, 8 P. M.
 April 17. Pathological Conference, Hotel Dieu, 10-11 A. M.
 April 17. I. C. R. R. Hospital Staff, 12 Noon.
 April 17. Eye, Ear, Nose and Throat Club, 8 P. M.
 April 18. Physiology Seminar, Tulane University, 8 P. M.
 April 18. *Special Meeting, Orleans Parish Medical Society*. Dr. Chas. L. Scudder of Boston to be guest of evening.
 April 18. Mercy Hospital Staff, 8 P. M.
 April 21. Hotel Dieu Staff, 8 P. M.
 April 24. Pathological Conference, Hotel Dieu, 10-11 A. M.
 April 25. Physiology Seminar, Tulane University, 5 P. M.
 April 25. Medical Reserve Corps Branch School, 8 P. M.
 April 28. *Orleans Parish Medical Society*.

SECRETARY'S REPORT.

During the month of March the Society held two meetings. March 10, a regular scientific meeting was held and the following program was presented:

SYMPOSIUM ON PULMONARY TUBERCULOSIS.

X-Ray and Pulmonary Tuberculosis.

By:.....Dr. Leon J. Menville

Recent Methods and Treatment of Pulmonary Tuberculosis.

By:.....Dr. Chaillé Jamison

Surgery of Pulmonary Tuberculosis.

By:.....Dr. I. M. Gage
 (Dr. Gage being ill, Dr. Ochsner presented paper)

Discussed by: Drs. Wallace J. Durel, D. L. Watson, E. A. Bertucci and L. C. Chamberlain.

On Monday, March 24, a joint Clinical Meeting with the Orleans Parish Medical Society and the Charity Hospital Staff was held in the Miles Amphitheatre. At this meeting a number of physicians from Southeast Alabama were the guests of the Society. Very interesting cases were presented and discussed by the members and guests.

Both meetings were well attended.

At the meeting held Monday, March 10, Dr. Ernest Sidney Lewis was elected to Honorary Membership.

It is with regret that we report the death of one of our active members, Dr. Sara Tew Mayor.

TREASURER'S REPORT.

Actual Book Balance, January 31, 1930....	\$1,963.74
Receipts:	\$3,486.15
	<hr/>
	\$5,449.89
Expenditures:	\$2,445.68
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Actual Book Balance: Feb. 28, 1930.... \$3,004.21

LIBRARIAN'S REPORT.

During February, 101 books have been added to the Library. Of these 42 have been received by gift, 42 by binding, 11 from the New Orleans Medical and Surgical Journal and 6 by purchase. New titles of recent date are listed below.

We wish to call particular attention to the New Oxford Monographs of Diagnosis and treatment, purchased this month. Six volumes are already published and the system is highly recommended to the profession.

NEW BOOKS.

Oxford Monographs of Diagnosis and Treatment.
 v. 1-6. 1930.

Hay—The Neck. 1930.

Snyder—Blood Grouping. 1929.

Goldbacher—Hemorrhoids. 1930.

U. S. Army—Laboratory Methods. 1929.

Liddell—Mammalian Physiology. 1929.

Christopher—Minor Surgery. 1929.

Sansom—Treatment of Diabetes Mellitus. 1929.

Rolleston—Right Honorable Sir Thomas Clifford Allbute. 1929.

Daukes—Medical Museum. 1930.

Billings—General Medicine. 1929.

U. S. Army—Index-Catalog Series 3. v. 8. 1929.

Norris & Landis—Diseases of the Chest. 1929.

Jones—Orthopedic Surgery. 1929.

Central States Pediatric Society Transactions. 1929.

Rockefeller Foundation—Report. 1928.

N. Y. State—Report of Craig Colony. 1929.

O'Brien—Bibliography on Relation of Clothing to Health. 1929.

H. THEODORE SIMON, M. D.,
 Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

LOUISIANA STATE MEDICAL MEETING.

The Fifty-first Annual Meeting of the Louisiana State Medical Society will be held in Shreveport,

April 29 to May 1. The Chairman of the Committee on Arrangements, Dr. J. M. Bodenheimer, as well as the Chairman of the other Committees have arranged a most attractive program for the three-day session. The arrangements that have been made include an entertainment for the House of Delegates on Monday, April 28, at 12:30 P. M., at the Shriner's Hospital for Crippled Children. For the main body of the organization the Convention will start officially on Tuesday morning at 8:45 in the Washington-Youree Hotel, which will be the Convention Headquarters. Luncheon will be served this day by the Highland and North Louisiana Sanitariums. In the evening of the first day there will be the President's Reception, at which time the annual address will be

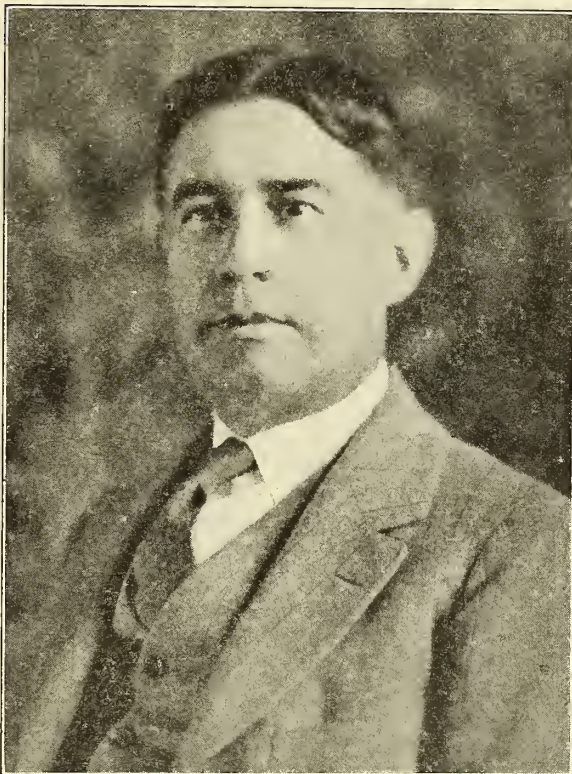
given by the Honorable Robert H. Hunter. The next day luncheon will be tendered by the Tri-State and Schumpert Sanitariums and that evening the banquet will be held at the Washington-Youree Hotel. A golf tournament has been arranged for those who are interested in playing this game.

A very extensive series of entertainments have been provided for the visiting ladies, who will be entertained at bridge parties, luncheons, garden parties and picnics.

The scientific program appears particularly interesting. An unusually fine selection of speakers has been made by the several sectional chairmen. The Louisiana State Medical Society is particularly fortunate in having some distinguished physicians from outside of the State as their guests. Dr. Walter C. Alvarez of the Mayo Clinic will speak on Puzzling Types of Indigestion, and Dr. Reginald

Burbank of New York is also down on the program under the Section of Medicine. Dr. Hugh McCulloch of the Medical School of Washington

University will appear before the Section on Pediatrics. Dr. W. Russell MacAusland of Boston will address the Section on General Surgery. From Baltimore will come Dr. David M. Davis, who will speak at the Section Meeting on Urology on Perineal Prostatectomy. Dr. E. B. Carpenter of Dallas will present some neurologic subject before the Section on Nervous Diseases. In addition to the scientific program, clinics will be held every day of the meeting at the Charity Hospital beginning at 7:00 o'clock in the morning. The combined social and scientific program are so attractive that undoubtedly they will appeal to a very large number of the profession in the State of Louisiana.



DR. FRANK T. GOUAUX,
President,
Louisiana State Medical Society.

SHREVEPORT.

Accessibility, accommodations and entertainment make Shreveport the ideal convention city. Located in the extreme northwestern portion of the state the city is accessible from a tri-state territory that is adding to the prosperity of the city year by year. As the trade center of the people of north Louisiana, east Texas and south Arkansas, Shreveport in reality serves a population many times that found within the real city limits. Retail and wholesale interests regard this as one of the most valuable commercial assets in the economic make-up of the city.

A city of 100,000 Shreveport covers an area of 21 square miles. It is from 200 to 280 feet above sea level. The mean annual temperature is 68°. The maximum temperature in the summer time is 86° and the maximum in the summer 45°. An annual rainfall of 44 inches is found in Shreveport.

HISTORY

Much of Shreveport's early history is centered around her founder, Captain Henry Miller Shreve, from whom the city takes its name. Shreveport was founded in 1836 when Captain Shreve had headquarters at the present site of the city for his group of raft removers. Red River was unnavigable due to a raft that had formed in the river. Captain Shreve undertook to remove this raft recognizing the possibilities of the territory this river served. A huge old log trading post on a bluff overlooking the river known as Cane & Bennett's Bluff was the beginning of the settlement. Captain Shreve used this landing as headquarters while working on the river.

When the Caddo Indians, a peaceful tribe inhabiting all northwest Louisiana ceded their lands to the government by treaty they reserved a section for Larkin Edwards, who lived among them and had been their friend, protector and interpreter. It is from a grant by solemn treaty by this tribe that all real estate titles in Caddo Parish stem, and from a special reservation in this treaty in favor of their benefactor, Larkin Edwards—"though poor, he has never sent the red man away from his door hungry" reads the treaty—that all titles to all property in Shreveport's business district descend. The marks of seven Caddo chiefs were affixed to the treaty of this grant on July 3, 1835. The Caddo Indians peacefully removed their tepees in order that the log cabins of the white man might take their place. Nothing remains today to commemorate this friendship but the name Caddo Parish and Edwards street, a commercial thoroughfare of the city.

This site was sold in 1837 by Edwards to a company of seven men, who formed the Shreve Town Company. The purchase price was \$5,000.00 and today the assessed valuation of the city is over \$124,000,000.00.



An aerial view of the City of Shreveport.

Captain Shreve was one of the seven original purchasers of the city and undoubtedly played a leading role for the thriving little river port was incorporated in 1839 and named Shreveport. Historians are just beginning to recognize the importance of "this first great river captain" and during the past year or two historical books have paid considerable attention to Captain Shreve as a developer of the important inland waterway system of America.

Red River then took the lead in the building up of Shreveport. Steamboats plied their way up and down Red River with Shreveport as the most important port. It served as a feeder to New Orleans for the entire territory.

At the time of the Civil War Shreveport was a thriving town of 3,000 inhabitants doing a big trade with the vast fertile territory around. According to an unsubstantiated legend prior to the Civil War fifty wagon trains were used to do business with Mexico. The census of 1850 shows that Louisiana ranked sixth in the property per capital of the United States.

Shreveport was soon known as the second largest inland cotton market in the country and the city's supremacy in the cotton trade has continued augmented by the entrance into the city of seven important railroad lines.

PROGRESS TODAY

Shreveport possesses outstanding civic pride and evidences of this are resulting daily in the progress the city is making along civic development lines.

Among recent improvements and buildings of a civic nature in Shreveport is the Municipal Memorial Auditorium dedicated on Armistice Day, 1929, and built at a cost of \$500,000.00 to the city. This has the largest seating capacity in the city. A half million dollar viaduct over a half mile in length serves as an uninterrupted traffic artery between the business and residential district. This serves 20 per cent of the motorists of Shreveport. The viaduct and auditorium, both costing approximately a half million dollars a piece, are two items in a two million bond issue voted by the city in 1926 for civic improvements.

AIRPORTS.

Two recent bond issues of far reaching importance were the voting of a \$300,000.00 bond issue for the installation of a municipal airport. The land for this has already been bought and work begun on preparing the site. In a bend of the historic Red River will lie this municipal airport in a position already approved and commended by the foremost authorities in the United States Air Corps.

One of the biggest civic honors to ever come to Shreveport was the selection by the War Department of the United States of Shreveport as the location for the Third Attack Wing of the U. S. Air Corps. Indicative of the spirit of loyalty of the people of Shreveport was the voting last year of a bond issue of \$1,500,000.00 for the purchase of 22,000 acres of Red River plantation land for the site of the future home of the Attack Wing.

Cities all over the south were with Shreveport in the competition for this coveted army post. Shreveport's victory was to the personal satisfaction of every citizen. The city is now completing the details of deeding over the last block of the tract. The initial investment of the government in this field, which will lie three and one-half miles from the city limits, will be eight million dollars. A complete community unit with all buildings necessary for a town of 3,000 will be built by the government.

BASIC PROSPERITY.

Shreveport draws its prosperity and progress from four basic economic interests: agriculture, manufacturing, lumber and oil and gas.

The territory around Shreveport is essentially agricultural and Caddo Parish leads the state in cotton production annually. Shreveport clears over twenty million dollars through its cotton market each fall as it serves as the buying and selling point for the tri-state area. While cotton is primarily the major crop, interest is being manifested and profitably manifested in diversified farm interests. Dairying is taking a strong hold on north Louisiana farmers.

Pecan orchards are coming into their own for Shreveport is the center of the largest paper shell pecan producing area west of the Mississippi river. The establishment of a government pecan experi-

mental station in the vicinity just south of Shreveport will give considerable impetus to the industry.

The lumber industry is one of the oldest industries in the Shreveport territory dealing with natural resources. Approximately 50,000 cars of timber products originated in territory closely adjacent to Shreveport and clear through the city as a lumber market with a wholesale value of around \$21,000,000.00.

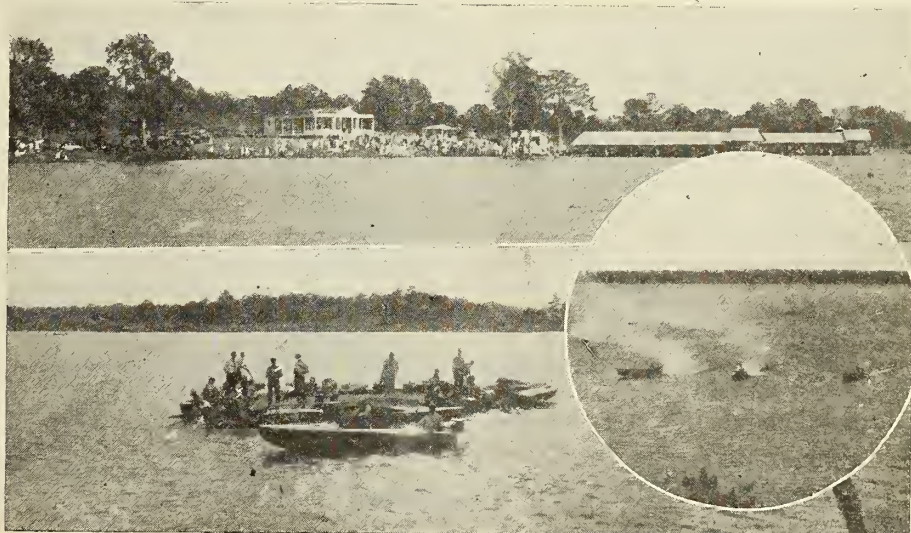
The first oil well was brought in in the Shreveport territory about twenty-five years ago and for the past fifteen years Shreveport has been an oil and gas capital of high rank in mid-continent producing circles. Dozens of fields have been brought in in the surrounding territory and much of Shreveport's prosperity and growth goes back to these successive developments.

THINGS OF INTEREST.

Shreveport has many things of interest to the visitor. The magnificent new Caddo Parish Court House is the heart of the city and never fails to attract attention. A unique feature is the parish jail located on the seventh and eighth floors.

The Shrine Hospital for Cripple Children is a beautiful institution, which will soon be still further improved. Seven miles out the Pines, a tuberculosis institution, is of interest. Four general hospitals with the Charity Hospital complete Shreveport's group of hospitals, namely, the Highland, Schumpert, Tri-State and North Louisiana.

Two country clubs, the Shreveport Country Club and the Broadmoor Club, are of interest to visitors. Cross Lake near the city is well worth an afternoon drive. Fort Humbug overlooking Red River is a spot of historic interest. The Shreveport Little Theatre, Dodd College and Centenary College are worth a visit. Caddo Lake with its bed dotted with oil derricks is twenty-two miles north of the city.



Views on Cross Lake at Shreveport. Speed boating is a popular summer sport.

PRESIDENTS' DINNER.

This annual function, so thoughtfully established by Ex-President Lester J. Williams at the Baton Rouge meeting, is being arranged for by the ex-presidents of Caddo Parish who are members of the Shreveport Medical Society. Dr. Oscar Dowling (1907), Dr. J. C. Willis (1915), Dr. J. E. Knighton (1921), and Dr. A. A. Herold (1927) will be the hosts at a stag dinner to be given at six o'clock on Monday, April 28. Invitations will soon be issued to the other "has beens," as well as to the president and the president-elect.

WOMAN'S AUXILIARY, LOUISIANA STATE MEDICAL SOCIETY.

It is urged all the wives of doctors, their sisters, daughters and mothers join. Those outside of Shreveport and New Orleans can make application direct with remittance of \$1.25 annual dues to Mrs. H. B. Gessner, secretary-treasurer, 119 Audubon Boulevard.

At New Orleans Mrs. J. A. Stork is president.

At Shreveport Mrs. Robert G. (Esther C.) Douglas is president, and from here I have the following program:

Monday, April 28, the House of Delegates meet. There will be an evening bridge party at the hotel for those wishing to attend.

Tuesday, April 29:

10-12 A. M., Business meeting of Auxiliary.
1 P. M., luncheon at hotel. Address by Mrs. Allen Bunce, president of the Woman's Auxiliary of the American Medical Association. 4 P. M., Garden party. 8 P. M., Open meeting of the State Medical Society.

Wednesday, April 30:

1012 A. M., Business meeting of Auxiliary.
12:30 P. M., leave hotel for picnic luncheon to be followed by sight-seeing trip to radio station, "Kennonwood," and other places of interest. 3 P. M., Banquet. (Maybe dancing.)

MRS. OSCAR DOWLING, President.

NEWS AND COMMENT.

Professor George Portmann will give a five-week intensive post-graduate course in ear, nose, and throat surgery at the University of Bordeaux, France, commencing July 21, 1930. This course is open to American physicians.

For information apply to Dr. L. Felderman, Mitten Building, N. W. Co. Broad and Locust Streets, Philadelphia, Pa.

THE MONROE MEDICAL CLINIC.

A new medical clinic is to be erected in Monroe at a cost of \$200,000. The Clinic building is to be of Spanish design, 135 by 180 feet, and will be three stories in height. It will contain 66 rooms completely equipped. The Monroe Medical Clinic, which has been incorporated, is composed of Dr. G. Q. Graves, Dr. A. G. McHenry, Dr. B. M. McKoin, Dr. A. D. Tisdale, Dr. E. J. Young and Dr. M. W. Hunter. Associated with them is Dr. Oscar Dowling, formerly president of the Louisiana State Board of Health. F. T. Doane is in charge of the roentgen-ray laboratory.

Covington, La., March 15, 1930.

The St. Tammany Parish Medical Society met last evening at the New Southern Hotel, Covington, in regular session with the following members present: Drs. Gautreaux, Maylie, F. F. Young, Stevenson, L. R. Paine, Lawrence Young and H. D. Bulloch. One guest present, Dr. L. G. Stirling of Baton Rouge.

The meeting was called to order by President Gautreaux and the minutes of the previous meeting were read and adopted.

The regular order of business was transposed to await the arrival of expected members before beginning the scientific program, and miscellaneous business was disposed of.

The question of inviting the Sixth District Medical Society to meet with us in the fall, was discussed, resulting in the society deciding to invite said society to meet with us. The chair appointed a committee to take the necessary steps to procure said meeting if possible. Other minor matters being disposed of, the society called on Mr. Story, a representative of the Petrolagar Laboratories, who was present, to present his moving picture, "Gall Bladder Work" by Ivey. The picture was well received and appreciated. Mr. Story was thanked by the chair for his courtesy. Meeting adjourned to meet in Slidell, April 11, 8 P. M.

H. D. BULLOCH, M. D.
Sec. and Treas.

At a meeting held at Patterson, La., the St. Mary Society elected the following officers: President: Dr. A. C. Kappel; Secretary-Treasurer: Dr. T. H. Gueymard; Delegate: Dr. T. H. Gueymard; Alternate: Dr. Lewis B. Crawford.

The meeting was held at the St. Mary's Hospital at Patterson and was climaxed by a most enjoyed luncheon prepared by the nurses. Dr. Crawford discussed several very interesting surgical cases of his of recent date. Our parish health doctor, Dr. R. L. Craig, was admitted to membership.

PARISH MEDICAL SOCIETY OFFICERS.

The following Parish Medical Societies have elected officers for 1930:

Avoyelles Parish: President, Dr. Kirby A. Roy Mansura; Vice-President, Dr. R. G. Ducote, Bordelonville; Secretary-Treasurer, Dr. S. J. Couvillon, Moreauville; Delegate, Dr. S. J. Couvillon, Moreauville.

Beauregard Parish: President, Dr. J. C. Miller, DeRidder; Vice-President, Dr. S. T. Roberts, DeRidder; Secretary-Treasurer, Dr. S. O. Turner, DeRidder; Delegate, Dr. T. R. Sartor, DeRidder; Alternate, Dr. J. C. Miller, DeRidder.

Caddo (Shreveport) Parish: President, Dr. R. G. Douglas, Shreveport; First-Vice-President, Dr. W. S. Kerlin, Shreveport; Second Vice-President, Dr. G. A. Caldwell, Shreveport; Secretary, Dr. W. B. Heidorn, Shreveport; Treasurer, Dr. J. R. Stamper, Shreveport; Delegates: Dr. R. G. Douglas, Dr. J. L. Scales, Dr. W. P. Butler, Dr. J. A. Hendrick, Dr. J. E. Knighton, Dr. C. R. Gowen, all of Shreveport; Alternates, Dr. G. A. Caldwell, Dr. A. A. Herold, Dr. J. C. Willis, Dr. W. J. Norfleet, Dr. D. L. Kerlin, Dr. J. G. Pou, all of Shreveport.

Jackson-Lincoln Bi-Parish: President, Dr. C. S. McDonald, Jonesboro; Vice-President, Dr. D. S. Calhoun, Ruston—from Lincoln Parish; Vice-President, Dr. W. M. McBride, Ansley—from Jackson Parish; Secretary-Treasurer, Dr. Marvin T. Green, Ruston; Delegate, Dr. W. S. Rutledge, Ruston; Alternate, Dr. J. J. Bennett, Ruston.

Lafayette Parish: President, A. J. Comeaux, Youngsville; Vice-President, Dr. L. A. Prejean, Scott; Secretary-Treasurer, Dr. W. J. Yongue, Lafayette; Delegate, Dr. R. D. Voorhies, Lafayette; Alternate, Dr. M. E. Saucier, Lafayette.

Sabine Parish: President, Dr. W. G. Allen, Converse; Vice-President, Dr. W. P. Perkins, Gandy; Secretary-Treasurer, Dr. D. Harvey Dillon, Many; Delegate, Dr. W. G. Allen, Converse; Alternate, Dr. Edgar Hull, Pleasant Hill.

St. Landry Parish: President, Dr. L. J. Bienvenu, Opelousas; Vice-President, Dr. J. N. Brown, Washington; Secretary-Treasurer, Dr. W. R. Las-trapes, Opelousas; Delegates, F. J. Mayer and Dr. Geo. R. Beridon, both of Opelousas; Alternates, Dr. E. LaFleur, Opelousas and Dr. Gordon Morgan, Melville.

Vermilion Parish: President, Dr. Leo. Saporito, Kaplan; Alternate, Dr. H. A. Eldredge, Abbeville.

The Tangipahoa Parish Medical Society was re-organized February 13, with the following officers for the ensuing year: Dr. E. L. McGehee, President; Dr. J. H. Galloway, Vice-President; Dr. W. T. Newman, Secretary-Treasurer. Dr. L. L. Ricks was elected delegate to the Louisiana State Medical Society Meeting April 28 to May 1; Dr. Louis B. Leggio, alternate.

The next regular monthly meeting will be held at Independence, Thursday, April 10.

The Chairman of the Committee on Arrangements of the Eleventh United States Pharmacopoeial Convention to be held in Washington, D. C., May 13, 1930, announces that the hotel headquarters are to be the Hotel Willard. Special rates have been made at this hotel as well as at the Raleigh, the Washington, the Hotel Powhatan and the Hoel Harrington.

Assistant Surgeon E. M. Gordon of the United States Public Health Service has been relieved from duty at the Marine Hospital, New Orleans and assigned to the Marine Hospital, Boston, Mass.

Dr. Randolph Lyons, head of the Department of Medicine, Graduate School of Medicine, The Tulane University of Louisiana, attended the meeting of the Interurban Clinical Club in Atlanta, Ga., March 22, 1930.

WEEKLY HEALTH INDEX.

During the week of February 15, there were 181 deaths in the City of New Orleans, with a death rate of 22. Twenty of these deaths were in children under one year of age, as contrasted with 11 in the corresponding week in 1929 in which week there were 10 deaths. During the week of February 22, the death rate fell to 19.7, the total deaths being 162 as contrasted with 199 in the corresponding week of 1929, when the death rate was 24.2. The same relatively low death rate was maintained during the week ending March 1. In this period there were 164 deaths, the death rate being 19.9 with 15 deaths in children under one year of age. In 1929 in this particular week the death rate was 18.6. In the next week which ended March 8 there were reported 182 deaths with a death rate of 22.1 with 12 deaths in children under one year of age. In the corresponding week of the previous year, the death rate was 21.4 with total deaths of 176.

UNITED STATES EXAMINATIONS.

The Civil Service Commission announces an open competitive examination for filling medical vacancies occurring in the Federal Classified Service throughout the United States. These include assignments in such departments as the United States Federal Bureau, Public Health Service, Indian Service, Panama Canal Service and Coast Survey Work. The competitors will not be required to report for examination but will be rated on educational training as thirty per cent and experience as seventy per cent. Details of this examination can be obtained from the Journal Office.

The Treasury Department announces the examination of candidates for commission as Assistant Surgeon with the regular corp, United States Public Health Service, to be held at New Orleans, May 5, 1930.

The United States Civil Service Commission also is announcing open competitive examinations for social workers (medical) trained nurses and trained nurses (psychiatric).

OPHTHALMOLOGICAL AND OTOLARYNGOLOGICAL SOCIETY.

The annual meeting of the Ophthalmological and Otolaryngological Society was held at the La Louisiane Restaurant on the night of January 16, 1930. The orator of the occasion was Mr. R. Van Chase, manager of the New Orleans Association of Commerce who spoke on "What the Association of Commerce Meant to Medicine in New Orleans."

After the banquet the following officers were elected:

Dr. William A. Wagner, President.

Dr. M. Meyer, Sect'y.-Treas.

MEETING OF WEBSTER PARISH MEDICAL SOCIETY.

The Webster Parish Medical Society held its quarterly meeting at the Minden Sanitarium, noon, March 12, 1930. Dinner was served the members, and after the hospital staff had been suitably thanked for the most excellent menu the regular order of business was followed. The attendance was good and four new members were admitted—Drs. W. C. Summer, P. H. Reed, J. E. Johnson, and B. W. Ward.

Dr. J. B. Benton was introduced to the society as the new president of the Fourth District Medical Society. Dr. W. C. Summer, Parish Health Officer, urged the continued reporting of notifiable diseases to his office. The members were urged to attend the meeting of the Tri-State Medical Society at Marshall, Texas, on March 20.

At the close of the business meeting, Dr. J. D. Kilgore read a paper on "Peritonitis," and Dr. V. W. Ward presented one on "The Intravenous Administration of Iso-Iodeikon With Notes On Conduct of Surgery of the Gall-Bladder." Both papers were fully discussed.

The doctors attending the meeting were: C. M. Baker, W. McDade, J. B. Benton, L. Longino, B. A. Norman, J. D. Kilgore, R. W. Smith, S. F. Martin, P. H. Reed, W. C. Summer, and B. W. Ward.

WILKINS McDADE,
Secretary and Treasurer.

THE PUBLIC AND MEDICAL CONVENTIONS

—Probably no professional men work harder or longer to acquire new knowledge than physicians. They are always at school. They are always exchanging discoveries, if not at conventions then through professional journals. The happy "hit" of one doctor becomes at once public property available to the hands of every colleague. They do not patent their inventions and mint the sufferings of mankind into cash. They are sentinels always on the watch and always eager to sound the alarm when a foe approaches or when an enemy can be beaten back.

Thus a medical convention is of greater interest to the community at large than a gathering of any other class of worker. They do not meet to create monopolies but to assemble free gifts for

the world at large. A cancer discovery in Vienna—if it be true—increases the expectation of life in Saskatchewan, in the Malay States, in every land under the sun. The report of these conventions in the popular Press, couched in language understood of the plain people, are of real and widespread educational value. To popularize medical knowledge is a public service. Nothing interests the average man so much as his health, and to be able to read what the best doctors in the world are saying about the particular malady that menaces him is a priceless boon. Yet these reports could not be printed if the medical men did not meet in open conference and discuss their difficulties as well as their achievements within the hearing of humanity as a whole.—Editorial: Montreal Star. Reprinted in Canadian Med. Assn. Jour., 21:336, 1929.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

HOTEL ACCOMMODATIONS FOR MEETING OF MISSISSIPPI STATE MEDICAL ASSOCIATION.

Dr. W. H. Parsons, chairman of the Committee on Hotels, has made the following announcement of hotel accommodations for the meeting of the Mississippi State Medical Association at Vicksburg on May 13, 14 and 15:

CARROLL HOTEL AND NATIONAL PARK HOTEL

Can accommodate 150 people in the two hotels.
Rates: Without bath—Single \$1.50; Double \$2.00. With bath—Single \$2.00 and \$2.50; Double \$3.00 and \$3.50.

HOTEL VICKSBURG.

60 Rooms. Rates: Single \$3.00; Double \$5.00.
Corner rooms with twin beds \$5.50.

NEW WASHINGTON HOTEL

50 Rooms. Rates: Without bath—Single \$1.00 and \$1.25; Double \$1.50 and \$2.00. (Include use of shower baths on each floor).

With bath—Single \$2.00; Double \$3.00.

Members of the Association are urged to make reservations at once, indicating hotel of choice and accommodations desired. Address Dr. W. H. Parsons, Vicksburg Hospital, Vicksburg.

TRI-COUNTY MEDICAL SOCIETY.

Dr. J. R. Markette, Secretary, reports that the regular meeting of the Tri-County Medical Society was held at Wesson on March 11, with an unusual attendance. Much interest was manifested in the excellent program presented.

The guests of honor were Doctors W. A. Dearman, Gulfport; E. C. Mitchell, Memphis, and J. J. Shea, Memphis. The talks presented were "Focal Infections as an Impairment to Life's Work," "Vaccines and Antitoxins," and "Acute Sore Throats with Special Reference to Vincent's Angina."

SOUTH MISSISSIPPI MEDICAL SOCIETY.

Dr. C. C. Hightower, Hattiesburg, reports that the meeting of the South Mississippi Medical Society was held at the Masonic Temple, Hattiesburg, on March 13. The program was as follows:

1. Treatment of Hemorrhoids by the Injection Method.—Dr. G. C. Terrill, Prentiss.

Discussed by Drs. A. B. Harvey and P. E. Smith.

2. Summer Diarrhea in Infancy and Early Childhood.—Dr. Robert A. Strong, Professor

of Pediatrics, Tulane University, New Orleans. Discussed by Drs. H. L. McKinnon and L. L. Polk.

3. Diagnosis of Appendicitis, Acute and Chronic.—Dr. C. C. Hightower, Hattiesburg.

4. An Inquiry into the Cause of the Chronic Appendix.—Dr. Urban Maes, New Orleans.

The above papers were jointly discussed by Drs. L. H. Martin, H. G. McCormick, T. E. Ross, Sr., and R. H. Foster.

5. A Paper.—Dr. R. E. Schwartz.

A business meeting was held at 3 p. m. and dinner was served at 6:30 p. m.

RUSH'S INFIRMARY.

The regular monthly meeting of the staff of Rush's Infirmary, Meridian, was held on March 7, with 22 members present. The scientific program included the following:

Toxemias of Pregnancy.—Dr. H. Lowry Rush.

Discussed by Drs. T. E. Royals, W. W. Reynolds, H. S. Gully and T. D. Bourdeaux.

Presentation of a case of Hyperemesis Gravidarum.—Dr. E. L. Richardson, Louisville.

At the conclusion of the meeting, a plate lunch was served.

DOCTOR OLYN FLOYD PARKES.

Dr. I. W. Cooper, Meridian, writes as follows: "It is with the keenest regret that I report the death of Dr. Olyn Floyd Parkes, Louisville, Mississippi, which occurred in Memphis on March 5, 1930. Dr. Parkes was a doctor who lived up to the traditions of the profession. He was a high-toned Christian gentleman in every sense of the word, and the ethics of our profession was his guide. It was the writer's privilege to be with him at the last meeting of the Southern Medical Association at Miami, and to be with him on a trip to Cuba and return following this meeting. I have never known a man whose company was more enjoyed. He was so kind and sweet to Mrs. Cooper on this trip that we can never forget him. Our deepest sympathy goes to his lovely little wife and two children, and to his devoted father and mother, Dr. and Mrs. W. W. Parkes, who made so many sacrifices in order that he might get the education which he so thoroughly took. His presence, his smiles and his councils will be sadly missed in our Association."

Dr. Olyn Floyd Parkes was 35 years of age. He was a graduate of Jefferson Medical College of Philadelphia in the class of 1919.

NORTH MISSISSIPPI SIX COUNTY MEDICAL SOCIETY.

Dr. A. H. Little, Secretary, announces that the next meeting of the North Mississippi Six County Medical Society will be held at Oxford, Wednesday, April 16. Visiting physicians are always welcome. By attending this meeting the Doctors of Mississippi will have an opportunity of enjoying both a medical program and seeing their new university buildings.

FROM MERIDIAN.

Dr. I. W. Cooper, Meridian, reports the following:

"Drs. J. H. and L. V. Rush have just returned from New Orleans where they spent several days on a pleasure trip.

"Dr. Thomas B. Bourdeaux has been elected chief medical director of the Southern Central Life Insurance Company which has just been organized in this city.

"Herewith you will find enclosed a copy of the program of the staff meeting of the Anderson Infirmary of this city. This program was very much enjoyed by everyone present and the scientific discussions were a great benefit to each and every one attending. I might add that all three of the hospitals in this city, viz., Anderson Infirmary, Meridian Sanitarium and Rush's Infirmary are all having wonderful meetings and when one goes to all of these meetings and hears the wonderful papers and the discussions, he soon realizes how little he knows and how his knowledge is limited. It is the writer's privilege to be invited to all of these staff meetings and I look forward with a great deal of pleasure to each and every one of them.

"Dr. K. T. Klein spent several days in New Orleans during the first part of March doing post-graduate work.

"Dr. T. E. Jarvis, Newton, former president of our society, is in New Orleans doing post-graduate work in diseases of children.

"On Tuesday, March 11, Dr. F. G. Riley had the formal opening of his Children and Maternity Hospital and Clinic. During the day this institution was visited by many hundreds of Meridian people and those from the adjoining territory. The writer spent several hours in the hospital on that day and the expressions heard as to the beauty and magnificence of this hospital certainly should be very gratifying to Dr. Riley and his corps of excellent nurses. This hospital is the final word in hospitalization for sick babies and for maternity patients. This institution can take care of over twenty patients and every con-

venience and every scientific apparatus is there for the treatment of sick children. It would do the pediatricians from all over the state good to visit this institution and see the kind of work Dr. Riley is doing and also see this magnificent hospital.

"Dr. and Mrs. S. H. Hairston with their son, Jack, have just returned from Washington where they attended the National Boy Scout meeting, at which meeting President Hoover made an address. They report a very enjoyable time.

"Dr. George W. Bounds, eye, ear, nose and throat specialist of this city, is building a beautiful home which he expects to occupy within the next thirty days.

"Dr. J. T. Googe, director of the Lauderdale County Health Unit, is building a lovely home which he will move into in about sixty days. We hope that this means Dr. Googe will be here permanently in public health work. He has made good and is getting harmonious support from all the physicians in Lauderdale County. They fully realize his worth and the good work he is doing.

"Dr. H. S. Gully, dean of the profession in this section, is now president of our medical society and the programs he is giving us are certainly wonderful and enjoyed by each and every one of us.

"I noticed in the letter which you sent out a few days ago that you were anxious to have a report of any births which happened to any of the doctors in this territory. I am very sorry to say that I have none to report and I think we are going to have to wait on Dr. Walter Holliday for the next one. There are no signs or indications at the present time which will justify the hopes of an early report of any births.

"You will herewith find enclosed report of the last staff meeting of Rush's Infirmary. This meeting was very enjoyable and a great benefit to all of those who attended."

NORTHEAST MISSISSIPPI THIRTEEN COUNTY MEDICAL SOCIETY.

Dr. James M. Acker, Jr., Secretary, reports the regular quarterly meeting of the Northeast Mississippi Thirteen County Medical Society held at Booneville on March 18. The program was as follows:

1. Meeting called to order.—Dr. K. F. McRae, President.
2. Invocation.—Rev. J. D. Thompson.
3. Reading and adoption of minutes of the last meeting.

4. Pyelitis.—Dr. F. L. McGahey, Calhoun City. Discussion opened by Drs. R. M. Boyd and C. B. McCown.

5. Rhinitis in Children.—Dr. S. L. Stephenson, Corinth. Discussion opened by Drs. Carr and E. K. Guinn.

6. The Relation of Organized Medicine to the Physician and his Obligation to it.—Dr. Hugh Gamble, Greenville, President, Miss. State Medical Association.

7. The Prevalence and Treatment of Gonorrhea.—Dr. W. W. Strange, Booneville.. Discussion opened by Drs. M. M. McMillian and M. W. Robertson.

8. Business Session.

9. Banquet 6 P. M., Dining Hall of Methodist Church, under auspices of Methodist Missionary Society. Banquet Orator—Dr. Seale Harris, Birmingham, Ala., "Conserving the Health and Prolonging the Life of the General Practitioner."

Music, Booneville Band.

The next meeting of the Society will take place at Houston on June 17.

TATE COUNTY MEDICAL SOCIETY.

Dr. J. Sidney Eason, Secretary, writes: "Am sorry, but there is no news whatever of any interest; no medical meetings; no hospitals. Following are the officers of the Tate County Medical Society for 1930: Dr. W. D. Smith, Senatobia, President; Dr. H. L. Murphey, Arkabutla, Vice-President; Dr. H. F. Byers, Senatobia, Delegate to the Mississippi State Medical Association; Dr. J. Sidney Eason, Secretary and Treasurer.

"We have one new doctor in the county, Dr. H. S. Phillips of Coldwater, since my last report to the Journal. Births and deaths for February not yet reported."

CHILDREN AND MATERNITY HOSPITAL AND CLINIC.

Dr. F. G. Riley, Meridian, has announced the opening of his Children and Maternity Hospital and Clinic, corner of 11th Street and 21st Avenue, Meridian. The building is especially constructed and equipped for the diagnosis, treatment and care of all types of sick infants and children, as well as for the care of maternity cases. The operating and delivery rooms are fully equipped for any surgical procedures. A corps of registered nurses, especially trained in this work, will be in charge. An all-time technician will be in charge of the clinical laboratory and physiotherapy department. The hospital

will be open to any reputable physician or surgeon.

Dr. Riley, who is physician in charge, will limit his practice as in the past, to the diseases of infants and children, and will maintain offices in the hospital and clinic building. Miss Hettye Ellzey, R. N., is superintendent. Frank Fort was the architect for the new building.

ENTERTAINMENT OF STATE ASSOCIATION

Dr. Edley H. Jones, chairman of the committee of the Issaquena-Sharkey-Warren Counties Medical Society on entertainment of the Mississippi State Medical Association, gives the following outline of the features that will be provided for the pleasure of the members of the State Association during the meeting in Vicksburg, May 13, 14 and 15:

GOLF.

We will have an eighteen-hole golf tournament open to all members and guests of the association. The only requirements are that they shall be practicing physicians and that they shall be registered. No entrance fee will be charged. The rules will be those commonly enforced in tournament play. All score cards must be turned in by 12:00 o'clock noon, Wednesday, May 14, so that any ties may be played off during the afternoon. Suitable trophies will be provided and will be presented at the barberue Wednesday night.

AUTOMOBILE RIDES.

Vicksburg has a very beautiful Military Park. The visitors would probably like to see this and might also be interested in the bridge across the Mississippi here. For the pleasure of those who would like to see these features, automobile rides will be provided from four to six p. m. on Tuesday and Wednesday afternoons. At the time of registering each registrant will be given a ticket, which will entitle him, or her, to an automobile ride during these hours, in groups of carloads.

FISHING.

Vicksburg is located in the center of one of the best fresh water fishing districts in the world. The famous Eagle Lake is only about twenty miles distant; should any of the visitors wish to go fishing, the chairman of the entertainment committee will be pleased to make arrangements for parties. Those interested have only to write to Dr. Edley H. Jones, Vicksburg, Mississippi.

STEAMBOAT RIDE.

On Wednesday between the hours of 12:30 and 2.00 p. m. a steamboat ride will be furnished for the pleasure of our guests. The tour will include the waterfront, Lake Centennial, the

site of the Mississippi River bridge, and a ride on the river. Refreshments and music will be provided.

BARBECUE.

On Wednesday night a barbecue will be given. It will be held at the site of historic Fort Nogales. Transportation will be provided. Elaborate preparations are being made for a combination barbecue and fishfry. The menu includes fish, barbecued beef, mutton and pork, meat balls and spaghetti, slaw, tomatoes, pickles, bread, iced tea, lemonade and coca-cola.

BOXING AND WRESTLING MATCHES.

The entertainment feature of the barbecue will be a boxing and wrestling program. There will be one good boxing match, one good wrestling match and a "Battle Royal."

ANDERSON INFIRMARY.

The regular monthly staff meeting of the Anderson Infirmary was held on March 14 with the following program.

1. Call to order by the President—promptly at 6:30 p. m.
2. Reading of minutes of the last meeting.
3. Business of the Staff.
4. Reports from the Records Department and analysis of the work of the hospital.
5. Special case reports and papers:

1. Four case of pseudo paralysis with demonstration of cases—Dr. W. Jeff Anderson—

Dr. T. G. Cleveland.

2. The diagnosis and treatment of mild depressions—Dr. C. S. Holbrook, New Orleans, Louisiana.

6. Recommendations for improving the service of the hospital.

7. Adjournment.

Plate lunch.

Dr. Hugh H. Johnston, Vicksburg, left March 22, to take up a fellowship in oto-laryngology at the Mayo Clinic, Rochester, Minnesota. Dr. Johnston, a son of Dr. S. W. Johnston, is a graduate of Vanderbilt University in the class of 1928 and since graduation has been house physician at the Vicksburg Sanitarium.

MEETING OF MISSISSIPPI STATE MEDICAL ASSOCIATION.

Dr. Sidney W. Johnston, general chairman of the host society committee for the meeting of

the Mississippi State Medical Association at Vicksburg on May 13, 14 and 15, makes the following announcement:

"A very full program for the 63rd Annual Session of the Mississippi State Medical Association has been outlined by the Issaquena-Sharkey-Warren Counties Medical Society.

A part of this program is given herewith:

"A registration bureau will be located in the lobby of the Y. M. C. A. Building which is located at the corner of Clay and Monroe streets and just one door east of the Hotel Vicksburg, and registration will start at 8 a. m., Tuesday, May 13. Committee from the Woman's Auxiliary, as well as the Issaquena-Sharkey-Warren Counties Medical Society will be in attendance at the registration bureau. From 8 o'clock Tuesday morning until late Thursday night automobiles will be parked near the Y. M. C. A. building for the use of any of the members or their wives. A card entitling each visitor to all the privileges of the Elks Club and the Y. M. C. A. building, with its swimming pool and shower baths, will be delivered to him or her in registration. An automobile sticker signed by the mayor of Vicksburg will entitle the holder to park his car at any place and for any length of time he cares to. The mayor assures the Association that his entire police force will do all in its power to help make the visitors have a good time.

"Fishing parties to Eagle Lake and other lakes will be provided transportation and privileges. A trip to the new eight million dollar Mississippi River Bridge, which will be completed on May 1, will be provided each visitor, also a trip through the National Military Park, which President Roosevelt declared the most beautiful in America. A golf tournament will be provided for the 'Golf Bugs.' Vicksburg boasts of one of the most complete and beautiful golf courses in America. A complete program of the Woman's Auxiliary and the Entertainment Committee are printed elsewhere.

"Visiting doctors are urged to bring their wives with them, and the Women of Vicksburg will be greatly disappointed if there are not a large number present.

"At the meeting Tuesday night to which the public is invited Mayor W. J. Hossley will deliver the address of welcome on behalf of the city and will turn over the key to the city. Dr. L. J. Clark, president of the Issaquena-Sharkey-Warren Counties Medical Society, will deliver the address of welcome in behalf of the Society. Rev. Gordon Reese will invoke divine blessings on the meeting and Mrs. Maimo Minter and

Mrs. Lane Busick will each render a musical number.

"Vicksburg will welcome the Mississippi State Medical Association with all the hospitality that a Southern city can show and every man and woman in it is anxious to show some attention to the visiting doctors and their wives. The committee hopes that the 63rd Annual Session will be the most successful and largest attended in the history of the Association."

OFFICIAL PROGRAM

WOMAN'S AUXILIARY MISSISSIPPI STATE MEDICAL ASSOCIATION.

MAY 13-14-15, 1930

VICKSBURG

Tuesday, May 13—

Registration at Y. M. C. A.

(Everyone is requested to register).

10:00 A. M.—

Executive Board Meeting—Monroe Room.
Hotel Vicksburg.

4-5:30 P. M.—

Saenger Theatre and Drive Through Vicksburg National Park.

5:30 P. M.—

Tea at National Park Golf Course.

Wednesday, May 14—

9:30 A. M.—12—

General Business Meeting—Coral Room.
Hotel Vicksburg.

12:30-2:00 P. M.—

Boat Ride Mississippi River, Steamer
George Miller, Lunch.

2-5:30 P. M.—

Saenger Theatre and Automobile Rides.

7:30 P. M.—

Barbecue—at Fort Nogales.

Thursday, May 15—

9:00 A. M.—

General Session—Coral Room, Hotel Vicksburg.

10:00 A. M.—

Election of Officers.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY.

The regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held on March 11, with twenty-two in attendance.

Scientific Program:

1. Discussion of Osteomyelitis, with Case Reports.—Dr. J. A. K. Birchett, Jr. Discussed by Drs. H. H. Johnston, E. F. Howard, and W. H. Parsons.

2. Some Observations on the Recent Meeting of the American College of Physicians.—Dr. L. J. Clark. Discussed by Drs. R. H. Foster, S. W. Johnston, H. H. Haralson, J. A. K. Birchett, Jr., G. W. Gaines, and F. M. Smith.

The Committees to arrange for the meeting of the Mississippi State Medical Association in Vicksburg in May, reported and active preparations are now under way.

The Society adopted resolutions favoring a generous appropriation by the Legislature for the Mississippi State Board of Health and ordered copies sent to the Governor, the President of the Senate, and the Speaker of the House.

The Committee on Public Health and Legislation was instructed to prepare resolutions opposing any change in the present narcotic laws so far as they apply to physicians. These resolutions are in protest against the passage of the Porter bills now before Congress.

The meeting closed with a Dutch lunch.

SCIENTIFIC EXHIBITS.

A committee of the Issaquena-Sharkey-Warren Counties Medical Society is arranging for a scientific exhibit at the meeting of the Mississippi State Medical Association this year at Vicksburg. This is an innovation which it is believed will add much to the interest of the meeting. Hospitals and physicians of the state are being requested and urged to have a part in this feature. The committee is made up of Dr. E. F. Howard, chairman, Vicksburg; Dr. F. M. Smith, secretary, and Dr. M. J. Few, Rolling Fork.

VICKSBURG SANITARIUM.

The regular meeting of the staff of the Vicksburg Sanitarium was held on March 10. The following special case reports were presented:

1. Fracture of the Pelvis with Rupture of Bladder.—Dr. G. M. Street.

2. Femoral Arterial Perivascular Sympathetic Neurectomy for Obliterating Endarteritis with Threatened Gangrene.—Dr. A. Street.

3. Carcinoma of the Thyroid.—Dr. J. A. K. Birchett, Jr.

4. Sarcoma of the Ovary.—Dr. H. H. Johnston.

Special Reports: The recent meeting of the American College of Physicians at Minneapolis.—Dr. L. J. Clark.

Slected radiographic studies were demonstrated as follows: Pulmonary Tuberculosis; Lung Abscess; Tumor of Mediastinum; Atheroma of Iliac Vessels Simulating Ureteral Calculi; Osteomyelitis of Femur; Old Fracture of Femur; Fracture of Body of 6th Dorsal Vertebra.

At the colse of th meeting lunch was served.

MERIDIAN SANITARIUM.

The monthly meeting of the Staff of the Meridian Sanitarium was held February 20. The program included the following:

Ruptured Ovary and Extra-Uterine Pregnancy.—Dr. A. C. Bryan.

Purpura Hemorrhagica Following Scarlet Fever.—Dr. F. G. Riley.

Intracranial Hemorrhage in the Newborn.—Dr. W. W. Reynolds.

Hospital Report for the Month of January.—Dr. S. H. Hairston.

Lunch was served.

SOME HIGH LIGHTS IN MISSISSIPPI MEDICAL HISTORY.*

(*Facts gathered from a History of the Mississippi State Medical Association, published in 1910).

At the 1880 meeting in Vicksburg, the executive committee reported that it had attempted to secure from the Legislature a law not only incorporating the Association, but making it the board of examiners and licensing body to regulate the practice of medicine in the State. This proposed law had been introduced in the Senate at the previous session of the Legislature and referred to its committee on judiciary, in which committee it was allowed to sleep until the session was over. The committee presented a draft of the bill for comment and approval. This report was accepted and the matter left in the hands of the committee, which was by no means idle, for it reintroduced the subject the next year, at the meeting 1881 in Winona, urging strongly the need of a medical practice act and requesting the members to bestir themselves and assist in efforts to procure such legislation. The committee at the Oxford meeting in 1882 formally presented the results of its labors in the shape of a medical practice act that had been passed a few months previously by the Legislature.

BOOK REVIEWS

The Laboratory Methods of the United States Army: Edited by Charles F. Craig, M. A., M. D. Philadelphia, Lea & Febiger. 1929. pp. 696.

This volume contains the laboratory methods which are used in the laboratories of the medical department of the Army and at the Army Medical School. It succeeds the first two editions of the Manual Laboratory Methods of the United States Army which were known as Medical War Manual No. 6. The material of these earlier manuals has been thoroughly revised and extensive additions have been made, especially in the sections on Protozoological Methods, Helminthological Methods, Entomological Methods, and Veterinary Laboratory Methods. It is thoroughly modern and contains directions for the most recent additions to laboraory diagnostic procedures. For example, there is a section of several pages devoted to the laboratory methods for diagnosis of tularemia. Each procedure is described in detail in a clear direct style which is very helpful. Full directions are given for the making of the necessary stock solutions and media, the methods of use of the various pieces of laboratory apparatus, for example the autoclave and colorimeter, and the

proper care of these instruments is given. The book is bound in a flexible leatherette cover, and is of very small dimensions. The type is of a size which makes very easy reading. All told, it is a book which will be of interest and value to the doctor who is interested in clinical pathology.

ADELAIDE MARY ZOELLER, M. D.

Surgical Diseases of the Thyroid Gland: By E. M. Eberts, M. D., R. R. Fitzgerald, M. D., and P. G. Silver, M. D. Philadelphia, Lea & Febiger. 1929. pp. 238.

The authors have given us a monograph in this little volume which is almost perfect. It is surprising to see that such a broad subject has been so completely covered in such a short space. They give a concise but full description of the anatomy and physiology and then one by one take up the various clinical abnormalities encountered. Their discourse on juvenile goiter is of particular interest, whilst such subjects as Graves' disease, iodine thyrotoxicosis, toxic and non-toxic adenomata, as also the late colloid goiters, inflammations of the gland, and malignant diseases are briefly but quite adequately covered. The subjects are discussed in such a way that only the

every day salient and practical features are given. It is written in easy style and is therefore a pleasure to read. The reviewer recommends it very highly.

FRANK L. LORIA, M. D.

Diseases of the Chest and the Principles of Physical Diagnosis: By George William Norris, A. B., M. D., and Henry R. M. Landis, A. B., M. D., Sc. D., with a Chapter on the Transmission of Sounds Through the Chest, by Charles M. Montgomery, M. D., and a Chapter on the Electrocardiograph in Heart Disease, by Edward B. Krumbhaar, Ph. D., M. D. 4th Ed., Revised. Philadelphia, W. B. Saunders Company. 1929. pp. 954.

This text book has always commanded universal admiration and respect. This new edition which represents practically a rewriting is quite up to the standard hitherto set. The new material that has been added is extensive and has brought the text up to date.

The authors have held fast to their original plan to write a book that was meant for the clinician and in which clinical methods have been especially emphasized. They have not failed to put before the student body and clinician all that is new and helpful, but in doing this they have held firmly to all that is well established in the old and well tried methods. In its field there is no book in whose possession the student can take greater pride or find greater usefulness.

I. I. LEMANN, M. D.

Blood Grouping in Relation to Clinical and Legal Medicine: By Laurence H. Snyder, Sc. D. Baltimore, The Williams & Wilkins Company. 1929. pp. 153.

In this little volume Professor Snyder has thoroughly reviewed the literature on the subject and added the results of his own extensive researches. Any one interested in this subject will find this a source of all the information necessary. Especially interesting and informative is the data concerning blood matching, grouping and the medico-legal applications of the same. It is shown that certain workers have found that the blood groups were inherited as two independent pairs of mendelian factors, the iso-agglutinogens A and B being dominant to their respective iso-agglutinins a and b. On this basis a specific agglutinin could not appear in a child unless it was present in at least one of the parents. This last fundamental observation has never been seriously questioned to the present day, although the assumption of two independent pairs of factors to explain it seems no longer warranted. When once the hereditary behavior of a pair of human characters is under-

stood, it is entirely possible, according to the author, to make a practical application of this knowledge in cases of disputed parentage.

S. J. LEWIS, M. D.

The Treatment of Diabetes Mellitus With Higher Carbohydrate Diets: A Textbook for Physicians and Patients: By William David Sansum, M. S., M. D., F. A. C. P., Percival Allen Gray, Ph. D., M. D., and Ruth Bowden, B. S. New York, Harper. 1929. pp. 309.

This small book differs from the usual so-called guide or primer for physicians and patients in that it covers considerable controversial ground. Dr. Sansum's well known views about the use of high carbohydrate diets in diabetes and the effect of acid-ash producing diets in causing arteriosclerosis are not universally accepted. His experience has, however, done much to liberalize the diet of diabetics, and even those who do not follow him entirely will agree that his published results are interesting and stimulating.

The reviewer's experience has been that it is frequently difficult to keep down the weight of diabetics taking diet with much fewer than the estimated caloric requirement and that this is true even where the fat intake is held down to a point equally as low as that recommended by Dr. Sansum. Whether a liberal carbohydrate diet will help gradually to stimulate the pancreas to regeneration is still an open question. There is much to suggest that this is the case.

Dr. Sansum's book is clearly written and quite interesting. It can be recommended to physicians who are interested in the controversy concerning the diet, to physicians who plan to follow Dr. Sansum's views and particularly to patients who have been either in Dr. Sansum's sanitarium or one modeled after it. The book would be confusing if placed in the hands of the usual patient who has not had the benefit of Dr. Sansum's training or some similar training. It shares in this respect the objection to be leveled at many of the other primers, namely, that it is not sufficiently simple.

I. I. LEMANN, M. D.

The Medical Museum: By S. H. Daukes, M. D., D. P. H., D. T. M. & H. The Wellcome Foundation Ltd. 1929. pp. 172, frontispiece and 44 figs.

"The Medical Museum" is not to be passed by after a glance at the title, and dismissed with the false impression that its contents will appeal only to picklers of specimens! As a matter of fact the subject matter may be characterized as a contribution to medical education—applying particularly to formal instruction in the schools and the lay health campaign.

Doctor Daukes, director of the Wellcome Museum of Medical Science in London, has written a succinct account of this exemplar of modern museum organization. Those who are denied the opportunity to visit the institution may yet secure truly vivid impression of the exhibits, many of which are illustrated by excellent photographs. The policy governing the assembling of exhibits and the technical aspect of their preparation and arrangement are discussed. The addition of an extensive bibliography adds to the value of the work as a handbook of model museum policy and methods.

The outstanding distinction of the Wellcome Museum consists in its synoptical arrangement, each exhibit telling a connected story of conditions of disease. The primary classification of the collections separates the main etiological agencies; thus diseases of bacterial origin, food deficiencies, endocrinopathies and the like form the main divisions of the exhibits. Each division is introduced, wherever possible, by displays of main factors in causation. Within the division each disease is represented by display illustrating its specific etiology, pathology, symptomatology, treatment and prevention. The displays are made up of a wide variety of materials: photographs, paintings, radiographs, temperature charts and other graphic clinical records, statistical charts, cultures of organisms, models, pathological specimens, etc., all instructively arranged and labeled. A noteworthy advantage is derived from the synoptical arrangement. A disease is considered as an entity, rather than a condition to be parcelled out to the several basic sciences and clinical approaches which share in elucidating the whole. The Wellcome Museum may well serve as a guide for the construction of medical museums, however modest in scale; its example, moreover, should be of some service in stimulating "synoptical teaching"—outside the museums.

HAROLD CUMMINS, Ph. D.

Mammalian Physiology: By E. G. T. Liddell, D. M. and Sir Charles Sherrington, O. M. 2nd ed. Oxford, The Clarendon Press. 1929. Fig. 6, Text-Fig. 50, pp. 162.

The first edition of this book was of great help to the present reviewer some ten years ago in the preparation of a laboratory outline in which experiments on mammals were included as well as the traditional work on the frog and turtle. The observations here outlined are presented in clear fashion, operative details described and often pictured, the diagrams being so good that wall charts for the aid of students performing the experiments have been made of several of them.

The changes in the new edition involve a few omissions, most of which are relegated to a group

at the end which may be performed on repetition of the experiments, rearrangements and rewriting of parts of experiments and the addition of a few new ones on: circulatory changes and kidney volume, the preparation of secretin, the stretch reflex, the inhibitory action of the cerebellar cortex, the effect of spinal transection on decerebrate rigidity, a comparison of motor and reflex tetanus, and the protective mechanism against bacterial invasion.

The book will prove of interest to the physician who took his physiology years ago, by showing the much more interesting and valuable type of laboratory work now being pretty generally done as part of the teaching of this discipline. The teacher of physiology will be glad to have the description of the new experiments and the experimenter will find much of value in the way of suggestive aid in the carrying out of certain observations.

An interesting feature is the inclusion of graphs obtained by former students illustrative of the kind of results to be expected.

HENRY LAURENS, Ph. D.

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MEDICAL AND SURGICAL ASPECTS OF GOITER.*

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Baumann in 1895 discovered that large amounts of iodine were normally present in the thyroid gland and that there was only a small amount of iodine in goitrous glands. This was a suggestion at least that treatment with iodine might be beneficial to patients suffering from goiter. Chatin's observation that goiters were more prevalent in regions where the iodine content was low was also at least presumptive evidence that this substance might in some way be used in the treatment of enlargement of the thyroid gland. Kendall showed that the maximal amount of iodine which could be stored in the normal thyroid gland was about 6 mg. for each grain of dry gland; that the normal was about 2 mg. for each grain of dry gland, and that in goitrous glands it was so low as to be undetectable. In 1914, he isolated from the thyroid gland the specific iodine containing substance, thyroxine, which contains 65 per cent of iodine. Experiments showed that 1/66 of a grain of thyroxine would cause about a 3 per cent increase in the metabolic rate and that a single dose kept the rate elevated for a period of about six weeks in a person who

had little or no thyroid tissue. If thyroxine or thyroid extract is administered to a person with a normal thyroid gland, the symptoms which characterize exophthalmic goiter will not be produced.

The part which the thymus plays in hyperthyroidism is not known. The study of this gland in connection with goiters is, however, extremely interesting. Boothby and Giordano found, in reviewing reports of a large number of necropsies of patients dying from exophthalmic goiter, that thymic hyperplasia existed in 66 per cent of the cases, whereas among patients with adenomatous goiters with hyperthyroidism, thymic hyperplasia was found in 50 per cent of cases.

According to Plummer, goiter may be classified as colloid or endemic, adenomatous without hyperthyroidism, adenomatous with hyperthyroidism and exophthalmic.

Diffuse colloid or endemic goiter is most frequently observed at puberty or shortly afterward. Kimball and Marine in 1917 found that of 2305 girls of the city schools of Akron, Ohio, 445 had colloid goiter. McCarrison believed that the cause of this type of goiter is a toxic substance created by the presence of an intestinal micro-organism. Plummer has suggested in addition to this that possibly the intestinal flora may appropriate part of the small amount of iodine in food, thus causing iodine deficiency.

The consensus of opinion of most observers is that this type of goiter is due to iodine insufficiency and that the colloid

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material is stored in the thyroid gland as more or less of a by-product in the gland's attempt to maintain as nearly as possible the normal thyroxin content of the body.

This type of goiter in itself does not produce hyperthyroidism. Occasionally persons who are aware of its presence become nervous and a subsequent diagnosis of exophthalmic goiter may be made. With a normal metabolic rate, exophthalmic goiter can practically be ruled out.

The administration of desiccated thyroid usually causes a marked decrease in the size of this type of goiter. Basal metabolic estimation should occasionally be made and symptoms of hyperthyroidism should be watched for during the treatment.

In Kimball and Marine's series, 2190 girls without goiter were given 30 grains of sodium iodine over a period of two weeks twice yearly and goiter developed in only five.

Occasionally colloid goiters reach a tremendous size after puberty. If obstructive respiratory symptoms develop, operation should be resorted to because not infrequently adenomas may be present and may become hyper-active following the administration of thyroxin or thyroid. Exophthalmic goiter as a condition superimposed on a colloid goiter has been seen in a few instances but is not common. The microscopic picture characterizing this type of goiter is an excess of colloid distending the acini and usually causing flattening of the parenchymal cells.

Adenomatous goiter with hyperthyroidism is rare before the twentieth year, and comparatively so until after the thirtieth year of life. It can be classified along with colloid or endemic goiter and often is referred to as non-toxic goiter because symptoms of hyperthyroidism are absent. In this type of goiter there is apparently no alteration in the thyroxin content of the body. The geographic distribution is about the same as that of colloid goiter; usually

it is first noticed during the adolescent period, and consequently adenomatous goiter without hyperthyroidism, and colloid goiter are thought to have the same etiology. The formation of adenomas is thought to be a compensatory development of the thyroid gland, to supply the demands of the body for thyroxin. The prevention of adenomatous goiter, as of colloid goiter, is thought to be possible in most instances.

The adenomas may show cystic, calcareous, or hemorrhagic degeneration, may vary in size, and may be single or multiple. Microscopic examination in this type of goiter may disclose evidence of intra-adenomatous or of extra-adenomatous hypertrophy, like that found in exophthalmic goiter, but this does not necessarily mean that symptoms of hyperthyroidism are present.

It has been observed, however, that after the age of forty there is a tendency for adenomatous goiter to become hyperactive. The administration of compounds of iodine to persons more than thirty years of age with adenomatous goiter may cause hyperthyroidism. Adenomatous goiters may reach an enormous size, causing marked respiratory embarrassment and occasionally partial unilateral or bilateral paralysis of the vocal cords. The treatment is surgical. The possibility of malignancy developing in this type of goiter is an added indication for surgical intervention.

A careful survey of cases of adenomatous goiter with hyperthyroidism shows that a large percentage occurs after forty years of age. It is comparatively rare before the age of thirty-five, but occasionally is seen before the age of twenty-five. The condition is thought to be due to an abnormally high and unregulated concentration of thyroxin in the body brought about by the presence of the adenomatous tissue.

Consequently, the metabolic rate is increased and the clinical manifestations of hyperthyroidism appear. Plummer is of the opinion that in this type of gland the

symptoms are due to the manufacture of an increased amount of normal thyroxin, that the onset is more gradual than in exophthalmic goiter, and that the metabolic rate is lower.

MacCarty has called attention to the fact that areas of hypertrophy are much more common in adenomatous goiters with hyperthyroidism than in adenomatous goiters without hyperthyroidism. Occasionally, microscopic study of an adenomatous goiter with hyperthyroidism does not reveal hypertrophy.

Considerable cardiac injury frequently is associated with this type of goiter. The heart may return to normal, or nearly so, following thyroidectomy which is the accepted treatment for this condition.

Exophthalmic goiter frequently is called Basedow's, Graves' or Parry's disease. It has been suggested that this type of goiter secretes an abnormal product and also an excess of thyroxin. The symptoms produced by exophthalmic goiter are increase in the metabolic rate, a peculiar nervous syndrome, usually exophthalmos, and also a tendency to gastro-intestinal crisis evidenced by vomiting and diarrhea. In exophthalmic goiter there is diffuse enlargement of the thyroid gland.

The use of roentgen rays has been advocated in the treatment of exophthalmic goiter. Many of those who have tried this type of treatment have not been encouraged by the results obtained. Admitting it is efficacious in a limited number of cases, the amount of glandular destruction cannot accurately be measured. Broders has been unable to determine any change in goiters which have previously been treated by roentgen rays. The treatment of exophthalmic goiter is surgical removal. I shall take this up later in this paper.

On microscopic examination, the thyroid glands removed from patients with symptoms of exophthalmic goiter have been shown to present diffuse parenchymatous

hypertrophy and hyperplasia in all but a small percentage of cases. In about one-third of the cases, small adenomas may be found which evidently were present before the diffuse parenchymatous hypertrophy took place. The finding therefore of nodular goiters in conjunction with the syndrome of exophthalmic goiter is merely a coincidence.

OPERATION FOR EXOPHTHALMIC GOITER.

In the United States and Canada only forty-five operations for goiter are recorded to 1883. The mortality was slightly less than 15 per cent. Connected with the early surgical work on goiter in this country, the names of Nathan R. Smith, Cooper, Green, Marshall, Fenwick, Halstead, Crile, Ochsner, and C. H. Mayo deserve mention. In Europe, Kocher was one of the first to become interested in the surgical treatment of goiter. At the time of his death, in 1917, about 5,000 patients with goiter had been operated on in his clinic. The surgical mortality of subtotal thyroidectomy for exophthalmic goiter in The Mayo Clinic for the year of 1927 was 0.72 per cent.

Preparation: The improvement in the operative mortality of exophthalmic goiter centers around the efforts that have been made to estimate and reduce the operative risk.

Plummer is of the opinion that an abnormal substance produced in the exophthalmic type of goiter causes the phenomena which characterize the disease; namely, exophthalmos, a psychic state, useless movements, and the gastro-intestinal crisis. He believes that such a patient is always potentially in a condition to be rather suddenly precipitated into an exophthalmic goiter crisis, and that the increased metabolic rate is due to an excessive amount of normal thyroid secretion. Therefore, a marked decrease in the metabolic rate, without a remission of phenomena due to the abnormal secretion, would not indicate that the patient was ready for thyroidectomy. Consequently the operative risk cannot be dependent on the metabolic rate.

Various methods of preparation of patients have been used. In 1921, Pemberton showed that procedures preliminary to surgical procedures, such as ligation and injection into the gland of hot water were used in 123 per cent of the cases. In 1926 and 1927 such preliminary procedures were employed in less than 0.6 per cent of the cases. These methods have been replaced by the preoperative administration of iodine to patients with exophthalmic goiter. This has not only caused decrease in the surgical mortality, but it has greatly reduced the time necessary for surgical preparation and the medical mortality has been practically abolished.

In preparing the average patient with exophthalmic goiter for operation, 30 minims of compound solution of iodine (Lugol's solution) are given daily. The condition of the average patient may be considered favorable for thyroidectomy in about ten days. This is based on several factors. There is usually marked decrease in the metabolic rate, gain in weight, and marked diminution of the nervousness characteristic of this disease. There may be marked general improvement and only slight decrease in the metabolic rate. The administration of iodine in this type of case stops the progress of exophthalmos and the peculiar nervous syndrome is greatly lessened or abolished.

Usually a crisis in a patient suffering from exophthalmic goiter can be controlled within twenty-four to forty-eight hours. In such a case 50 to 100 minims of compound solution of iodine are given daily, by mouth or by proctoclysis, until the condition is under control. The long continued use of iodine does not permanently relieve the patient with exophthalmic goiter; exacerbations and remissions are still a characteristic feature of the disease.

Technic of Operation.—Since the use of iodine has become established, thyroidectomy has become a comparatively safe surgical procedure. There are, however, some points which should be borne in mind dur-

ing the surgical removal of goiter. Kocher noticed, in his earlier cases that after thyroidectomy, a peculiar condition occurred which was later recognized as parathyroid tetany. After the discovery of the parathyroid bodies and after their function had been studied, he was able to overcome this common postoperative complication by preserving a portion of the posterior capsule which corresponds with the normal position of the parathyroid bodies.

Another complication, or surgical accident, which must be guarded against is injury to the recurrent laryngeal nerves. The existence of these structures was first discovered and described by Galen, who found that if one of them was severed there was a change in the voice. Formerly it was believed that a fairly common complication following thyroidectomy was collapse of the trachea. It is now known that in practically all of such cases the condition is not that of collapsed trachea but of injury to one or both of the recurrent laryngeal nerves. It is the opinion of many that unilateral and bilateral recurrent laryngeal nerve injury occurs much more frequently than most of us would imagine. A careful survey would lead one to accept this assumption as true. Most injuries to the recurrent laryngeal nerves probably occur because of unfamiliarity with their exact anatomic position, which is quite different from that pictured in the usual textbook. Mikulicz emphasized the importance of leaving a small amount of thyroid tissue on the lateral wall of the trachea, along the course of the nerve to prevent injury to it. Before his suggestion, Billroth reported partial or complete paralysis of the vocal cords in 32 per cent of a series of seventy-one patients operated on by Wölfler. By a statistical study, Jankowski found paralysis of one or both vocal cords in 14 per cent of cases of extirpation of the thyroid gland. The most common sites of injury to the recurrent nerves during thyroidectomy are at the inferior pole of the gland, along the lateral surface of the trachea, and at the

cricothyroid juncture, where the nerve pierces the larynx. If a small amount of glandular tissue is preserved at the inferior pole, injury to the nerve is not likely to occur at this point. If too much of the gland is resected along the lateral surface of the trachea and at the cricoid juncture, and if, also, suturing is necessary to effect hemostasis, the nerve is likely to be injured.

It is extremely important in cases in which general anesthesia is used in addition to local anesthesia, that the patient be allowed to waken after the extirpation of one lobe in order that the operator can determine whether or not there has been injury to the nerve. In most instances injury to one recurrent nerve, of a sort that will be permanent, gives the patient little trouble immediately following operation, and the voice usually approaches normal in two or three months. If severe tracheitis occurs in a case of injury to a single nerve, respiratory embarrassment may be marked for two or three days. If marked stridor occurs, and laryngoscopic examination shows considerable edema of the glottis, with a markedly diminished breathing space, tracheotomy is advisable and should be done at once. Laryngoscopic examination should be made on all patients before thyroidectomy is done. Occasionally, a fixed cord will be found, due to pressure from the goiter. It is wise to make a laryngoscopic examination also immediately following thyroidectomy. In rare instances, symptoms of injury to the recurrent laryngeal nerve develop from two to three days postoperatively. Examination at this time may show fixation of one or both cords whereas immediately following operation their movement may have been normal. In such cases, hot, moist dressings over the wound and inhalations of steam, hasten the subsidence of the condition, which is due to edema or hemorrhage about the nerve. Tracheotomy may be necessary.

Besides injury to the recurrent laryngeal nerves, another complication which may occur is hemorrhage. It is usually manifest from three to twelve hours after operation. The first symptom of this complication usually is respiratory embarrassment. Occasionally, preceding this symptom, the patient may complain of the dressing being too tight. Either of these complaints should receive prompt attention. The dressing should be removed, and if hemorrhage has occurred there will be present marked bulging of the neck. The wound should be opened immediately; if a definite bleeding point can be found and hemostasis effected, the wound may be closed again. If only generalized oozing is found, the wound should be packed with gauze and left open for two or three days, when, under a local anesthetic it may be closed with a resulting satisfactory scar.

SUMMARY.

According to Plummer goiter may be classified as (1) colloid, endemic or simple; (2) adenomatous without hyperthyroidism, or non-toxic; (3) adenomatous with hyperthyroidism, or toxic; (4) exophthalmic, or diffuse parenchymatous, with hyperplasia or hypertrophy.

Diffuse colloid goiter usually occurs at about the age of puberty. It may be largely prevented by the judicious administration of iodine, as shown by Kimball and Marine. Colloid goiter may be successfully treated in young persons by the administration of thyroxine or thyroid extract. This type of goiter is fairly commonly confused with exophthalmic goiter.

Colloid goiters which reach a size sufficient to cause obstructive symptoms should be treated surgically; such cases are comparatively rare. Colloid goiters occasionally contain adenomas which may become hyperactive.

Adenomatous goiter without hyperthyroidism may be classified with colloid or endemic goiter. It apparently has the same etiology.

The formation of adenomas, except the true tumors, is looked on as a compensatory development in an attempt to meet the demand of the body for thyroxin. In adenomas there may be cystic, calcareous, or hemorrhagic degeneration. If they reach a size sufficient to cause pressure or obstructive symptoms, operation should be employed. The possibility of malignant change is an added indication for surgical removal.

Adenomatous goiters with hyperthyroidism are thought to cause an unusually high concentration in the body of thyroxin, which results in an increase in the basal metabolic rate. This type of goiter may occur before the age of thirty, but usually it occurs after forty-five years of age. The treatment is surgical.

Exophthalmic goiter may occur at any age. It is most common between the ages of twenty and forty. It is thought that there is an excess of normal thyroid secretion in addition to an abnormal thyroid product. The symptoms which characterize it can be diminished or relieved temporarily by the administration of iodine in the form of Lugol's solution. Exophthalmic goiter may be superimposed on adenomatous goiter and rarely on colloid goiter. The ultimate treatment is surgical, the mortality of which has been greatly reduced since the use of iodine has been established.

The most common complications during and following thyroidectomy are injury to the recurrent laryngeal nerves and postoperative hemorrhage.

THE USE OF DRIED BREWERS YEAST IN THE TREATMENT AND PREVENTION OF PELLAGRA.*

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Before the assignment of a specific etiology to pellagra, there was no sound basis for postulating the therapy of the disease. The studies of Goldberger¹ and his associates have, however, gone far to clear up the cause of this illness for they are responsible for the conception that the disease follows a diet containing an insufficient amount of the pellagra preventive vitamin. These investigations stand out as the only sound contribution to our knowledge of the source of pellagra.

The discovery of the use of yeast in the treatment of pellagra came about, like so many other important scientific advances, by accident. In attempting to stimulate the appetite of dogs for a diet calculated to cause them to develop black tongue—a canine disease similar to pellagra in man—Goldberger² added yeast cake to their food. Subsequent observation showed that black tongue did not follow a prolonged administration of faulty diet among the dogs to whose food yeast had been added but that an exactly similar ration without the added yeast caused the appearance of symptoms of black tongue in other dogs in due course. Later the removal of yeast from the diet of the first lot of animals was followed by the symptoms of black tongue. These important observations were among the early indications of the role of vitamins in pellagra. It was first thought that the lacking vitamin in pellagra was vitamin "B", the anti-beriberi factor, but later it was shown that it was probably a separate entity, which Goldberger designated as vitamin P-P (pellagra pre-

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ventative). It is now, in some quarters, designated as "E". Peculiarly enough the search for other foods high in the P-P factor has thus far failed to discover another nutritional element as rich in vitamin P-P as yeast.

PRESENT STUDY.

The increased interest in public health in the flood area of the Mississippi Valley following the spring inundations in 1927 served, among other things, to revive interest in the problem of pellagra. Armed with a new therapeutic agent in the form of yeast, whose usefulness up to that time could be judged only by its action in the laboratory, it was decided to attempt the treatment of pellagra with it in the field.

DESCRIPTION OF STUDY AREA.

Humphreys County has an area of 425 square miles and is located in the flat alluvial delta land of central western Mississippi. The estimated population for 1928 was slightly more than 21,000. In the rural areas the racial ratio is six negroes to one white. County-wide, including towns, the ratio is above 3:1. The chief occupation is agriculture and four-fifths of all agricultural endeavor is connected with the production of long staple cotton. The economic status of the farming population is rated as fair. The diet of both the colored and white farming elements is built around three staple articles—salt-meat, corn-meal and molasses. The most notable recent change in farming practice is that of substitution cash payments monthly to tenants on plantations in place of the former practice of furnishing rations from the plantation commissary. The advent of cheap motor cars has diverted a certain amount of money from the purchase of food and has played a definite part in the increase in pellagra in this part of the south during the past ten years.

OCCURRENCE OF PELLAGRA.

Morbidity—Pellagra is a reportable disease in Mississippi. At the end of each month practicing physicians send to the

Health Officer the number of cases, divided as to color, that they have seen during the month. In 1927, 422 cases were reported to the Health Officer during eleven months (there were no reports in the month of April due to the flood), giving a case rate of approximately 21 per 1000 population. During 1928, 547 cases were reported, giving a case rate of approximately 26 per 1000 population. Assuming that 50 cases would have been reported in April, 1927 (a fair average for that month) and counting the influence of free treatment, as will be discussed later, in bringing cases to physicians it is probably still correct to state that there was an increase in case incidence in 1912, but that it was not as marked as the figures would indicate.

Mortality—There were five deaths reported after August 1, 1927, to the Health Department and 16 deaths reported during 1928. Examination of the 1927 death records leads one to believe that all five deaths were due to pellagra (three males and two females under 16 years of age). Closer inspection of the 1928 death record shows five deaths above the age of 65.

Beginning August 1, 1927, the Health Department took steps to popularize the use of dried brewers' yeast in the treatment of all cases of pellagra. A supply of this food was placed in the office of each physician in the county (12 in number) for distribution and a stock kept on hand at the Department. Cases were examined and treated from the Health Department office on written requests from physicians. It soon became the custom to refer all cases to the Health Department and it is on this group that the following conclusions are drawn.

On the first visit, cases were given a superficial physical examination, sufficiently complete, however, to justify the diagnosis of pellagra. The cause of the illness was then explained to the patient and general instructions as to diet were given. The patient was then given 14 ounces of dried brewers' yeast and told to return in two

weeks. Instructions were issued to take one ounce per day (usually divided into three doses each, in a glass of water). When the case returned to the Department at the end of two weeks, another superficial examination was given and a further supply of yeast issued. Thus if patients desired to come in every two weeks during the year, yeast would be given them. Nearly all cases were so benefitted at the end of six weeks that they lost interest and were seen subsequently only on home visits or because of relapses the following spring. During the period reported upon a total of 346 cases were seen; 12 white and 334 colored. Of this group 184 have been seen sufficiently often and studied long enough to draw some conclusions from their cases. One case has already been reported in detail⁽³⁾ and seven of the remaining are white (three males, four females). In addition 38 other negro cases were kept on a constant dose of brewers' yeast daily for periods varying from 9 to 21 months. This group is discussed separately, later. The reported case and the other white cases are discarded from further study in this report. The remainder of 176 cases, all colored, are divided as to age and sex as follows:

TABLE I.
Age Distribution of Cases—All Colored.

Age	Under 5	5-9	10-14	15-19	20-29	30-39	40-49	50 and over	Total
Male	4	4	5	2	11	5	3	7	41
Female	6	6	4	11	46	29	19	14	135
Total	10	10	9	13	57	34	22	21	176

The above table serves to show three things about this group: First, 75 per cent of the cases occurred in females; second, that over 25 per cent of the cases occurred in females between 20 and 29 years of age and that over 60 per cent of all cases occurred in females above 20.

SYMPTOMS AT ORIGINAL EXAMINATION.

As each case reported to the Health Department for treatment, note was made of the outstanding symptoms of which the patient complained. Following is a table showing the results of this inquiry.

TABLE II.

Showing Complaints on First Examination.

Mouth symptoms only	19
Skin symptoms only	49
Mouth and skin symptoms	108
Diarrhea	34
Constipation	19
No complaints referable to bowels	123
Other symptoms (nervous)	3

This table shows that, when first seen, 69 per cent of the patients complained of mouth and skin symptoms, while 28 per cent of the group complained of skin symptoms only. Seventy per cent of the group had no complaint referable to the bowels and only 17 per cent complained of diarrhea. The last statement is interesting in that, as described in earlier studies, diarrhea was considered one of the cardinal symptoms of pellagra.

Patients were questioned at the first examination in regard to previous pellagra. The results of this interrogation were as follows:

New cases 95, first relapse 56, second relapse 10, third relapse 5, fourth relapse 4, fifth relapse 2, sixth relapse 2, eighth relapse 1, tenth relapse 1.

TREATMENT.

The total amount of yeast issued to the group amounted to 527 pounds (8,432

ounces), on an average of slightly over 48 ounces per case. It may be assumed that the average duration of treatment of these cases was about 50 days.

From the very nature of such therapy it will be seen that the use of brewer's yeast is a temporary measure; its function is to place in the diet a lacking element and if the yeast is withdrawn and the lacking vitamin is not obtained from other sources there is no reason to expect anything but a relapse of the disease in the near future. Such a therapy must be regarded, then, in

the light of a palliative measure to be used in tiding patients over an acute attack of the disease and carrying them along until their diet can be so extended as to prevent the recurrence of symptoms.

Of the 176 cases reported here as treated during at least one attack of pellagra, 175 were alive on April 1, 1929; one case died during treatment after five weeks. All other cases were, according to their statements and according to our examinations, benefitted by the use of yeast. The usual course of recovery begins with an improvement in the dermatitis, followed rather soon by a disappearance of soreness in the mouth. At the end of two weeks the dermatitis has almost disappeared and the subjective mouth symptoms are gone. At the end of four weeks there are usually no complaints, but the mouth and tongue pathology, although improved, is still obvious. The glossitis seems to be the last symptom to disappear.

The exact value of this treatment is difficult to estimate, however, when it is remembered that the ordinary case of pellagra that does not terminate fatally is usually clear of symptoms by October of the year in which symptoms develop.

One hundred and four had suffered no relapses in a period averaging 11 months after completing an average of 50 days of treatment. This group represents those cases who, having cleared up from the attack for which they sought treatment, have not returned for further aid. Information concerning them was obtained by home visits. Twenty-three cases that had likewise stopped treatment, when visited in February, 1929, showed early symptoms of recurrence (sore mouth and gastro-intestinal complaints). A group of 38 cases, as a special study, were kept on daily doses of one ounce of yeast from May until October and one-half ounce daily from October to May. The oldest case has been kept 21 months without relapse. In this entire group, averaging 13 months of treatment

according to the schedule above, there has been no relapse.

RELAPSE.

As noted above, 23 treated cases showed symptoms of relapse later when found by home visits. Of the cases voluntarily returning to the office for further treatment, 10 definitely showed symptoms of relapse. It is noted in passing that these 10 cases had averaged only 19 days of treatment.

SUMMARY.

Of 176 cases studied, one died during treatment, 104 had suffered no relapses in 11 months after 50 days treatment, 33 cases showed symptoms of relapse within one year after slightly under 50 days of treatment, and 38 special cases kept on daily doses averaging about three-fourths of an ounce the year round showed no relapses after an average of 13 months' observation.

CONCLUSIONS.

1. The results of the treatment of 176 cases of pellagra, with dried brewers' yeast, in negroes in Humphreys County, Mississippi, since August 1, 1927, are given.

2. Dried brewers' yeast in doses of one ounce per day greatly assists in allaying all symptoms of pellagra.

3. Once arrested, unless a dietary change is instituted to supply the missing vitamin, the withdrawal of yeast is followed by relapses within a year in about one-third of the cases.

4. A daily dose of one ounce of dried brewers' yeast during the period, May to October, and a half an ounce daily from October to May prevented the recurrence of symptoms of pellagra in all of 38 cases, over a period averaging 13 months.

5. It is pointed out that the ultimate control of pellagra is a matter of education in dietetics and that the use of brewer's yeast should be confined to the actual treatment of cases and to use for prophylactic reasons only until cases may be gotten on a diet that in itself will prevent the disease.

6. The subject invites further study.

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DISCUSSION.

Dr. R. D. Dedwylder (Cleveland): Mr. Chairman, Ladies and Gentleman: Dr. Carley has so thoroughly covered this subject that it leaves very little for me to say other than to back up what Dr. Carley has said in his remarks on the use of brewer's yeast in the treatment of pellagra.

All my thoughts are based on the observation of several hundred cases of pellagra treated following the Mississippi Valley flood in 1927. The Red Cross supplied us with all the yeast we needed. In that way, my observation did cover treating several hundred people suffering more or less from pellagra.

To my mind, it is inconceivable how a man on a well-balanced ration can develop pellagra. You can readily see then that I think pellagra is a nutritional disease, and to my way of thinking, nutrition and nutritional disturbances are one of the biggest factors with which we have to contend, especially in the tenant class of people in the Mississippi Delta Valley.

Brewer's yeast furnishes us with a chief source of a concentrated pellagra preventive principle that we can use as a food in the treatment of pellagra. It will keep the individual going and relieve him of all symptoms until you can supply the pellagra preventive principles in some other forms, if you are able to do it at all.

There is one thing relative to nutritional disturbances of pellagra that I do want to mention other than what Dr. Carley has brought out. A good many of the laymen feel that pellagra is a food sensitive disease, that it is brought around

from eating impure maize or from eating maize of any kind, corn meal, corn bread, etc.

That is not so. It is due to an unbalanced ration. If you get them off one side and put them on the other extreme, you still have these people on an unbalanced ration and you will have other disturbances. In the management of pellagra you want to get the individual on a well balanced ration. That is the secret of the whole business. As long as the patient is maintained on a balanced ration, he will not have pellagra or these nutritional disturbances.

By way of parenthesis, I suspect there are some dog lovers, bird hunters and fox hunters here. Yeast will relieve dogs of black tongue, and if dogs are fed yeast it will prevent them from developing black tongue. We have done this in several instances in our work in that county from an experimental standpoint to see if it would bring out these facts.

Further than these matters I have stated, I have nothing to add to the paper. The main thing that I wish to leave is that it is not a food sensitive disease, but a food deficiency disease.

Dr. Paul S. Carley (Closing): I have very little to add with the exception of one or two remarks. One of the last communications I had from Dr. Joseph Goldberger before he died impressed me very distinctly of trying to impress people generally that brewer's yeast is not a prophylactic against pellagra. I had a case of pellagra which was treated with yeast and was cured of symptoms, but when withdrawn from the yeast, the pellagra reappeared.

There is a widespread use of neo-arsphenamin in the treatment of pellagra. However, there are excellent physicians in my county who use yeast who formerly relied on the use of neo-salvarsan.

We have been studying the matter from the incidence of syphilis in the general population. The figures quoted by Van Alstine are used as a base line for syphilis in the general population. We have found to date in about two hundred cases which we have examined that the syphilis rate is lower in pellagra than in the general population rate. Whether or not that will hold out later, I do not know.

From the standpoint of syphilis, according to our own figures, we cannot determine that the syphilitic rate in negroes is as high as it is in the base line of the general population, which I think is somewhat fallacious.

SYMPOSIUM ON INFECTIONS OF THE
LIVER AND SUBPHRENIC SPACE.
MEDICAL, ROENTGENOLOGICAL
AND SURGICAL
ASPECTS.

I. ETIOLOGY AND DIAGNOSIS OF
SUPPURATION IN AND ABOUT
THE LIVER.*

J. H. MUSSEY, M. D.,†

NEW ORLEANS

One of the very real problems of medical practice is the detection of foci of suppuration either in the liver or in the immediate neighborhood of this large organ. Because of the relation the hepatic tissue has to the diaphragm, so-called subphrenic abscesses are frequently likely to occur in this region. This, then, is the first and the most important type of suppurative lesion that occurs about the liver. It might be mentioned in passing that in this symposium I will omit completely any reference to infections of the gall-bladder or bile tracts. The second important cause of suppurative lesions, this time within the liver, is a portal pyelphlebitis, which is responsible for multiple abscesses of the organ. The third and by far the most frequent cause of liver abscess is the almost ubiquitous *Endameba dysenteriae*, which is responsible for large single abscesses. In so far as the multiple abscess is concerned the usual causes are those dependent upon an intra-abdominal inflammatory disorder. Multiple abscess of the liver may be due to a host of causes and these causes consist of any factor that would produce multiple abscess in any part of the anatomy, but for some special reason seems to occur more frequently secondary to acute osteomyelitis. In this condition, however, the picture is one of a general process, a septicopyemia, rather than of local infection of the organ under discussion.

SUBPHRENIC ABSCESS

I will discuss first subphrenic abscess. The accompanying table will explain in detail the etiologic factors responsible for sub-

TABLE I

ORIGIN IN 84 CASES OF SUBPHRENIC ABSCESS COLLECTED BY FIFIELD AND LOVE

	No. of Cases	Per cent of all cases
Appendix	30	35.7
Perforated Duodenal Ulcer.....	12	14.2
Perforated Gastric Ulcer.....	12	14.2
Operations on Stomach.....	9	10.7
Gall-Bladder	5	5.9
Kidney	2	2.3
Chronic Gastric Ulcer.....	1	1.1
Carcinoma of Stomach.....	1	1.1
Carcinoma of Esophagus.....	1	1.1
Fractured Pelvis.....	1	1.1
Rib	1	1.1
Unknown	9	10.7

phrenic abscess in 84 cases as reported by Fifield and Love.⁽¹⁾ From this chart it may be noted that appendicitis is a most frequent cause; but if the various gastric etiologic factors were grouped, they would outnumber the cases of appendicitis responsible for this condition. Ochsner⁽²⁾ states that the most frequently involved subphrenic space is the right posterior superior and next, the right inferior.

SYMPTOMS.

Non-suppurative subphrenic infections are probably much more common than they are thought to be. They may occur with fairly definite signs and subside spontaneously. The constitutional symptoms of subphrenic abscess are those common to any infection or to a localized collection of pus from which there is a certain amount of absorption taking place. Thus the fever, the leukocytosis, and constitutional reaction in general indicate that there is infection present somewhere in the body. Localized symptoms early in the course of the infection are usually not outstanding. It seems safe to assume, however, in an individual who has had an acute suppurative appendi-

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†(From the Department of Medicine, Tulane University School of Medicine).

(1) Fifield, L. R. and Love, R. J.: Subphrenic abscess, Brit. Jour. Surg., 13:683, 1926.

(2) Ochsner, A.: Subphrenic abscess, New Orleans Med. and Surg. Jour., 81:102, 1928.

citis or a perforated peptic ulcer that the subphrenic space may be involved. Steps may be taken to prove this, consisting of a demonstration of localized tenderness, usually over the tip of the twelfth rib. Occasionally there is pain in the lumber region and some tenderness there. The pleural physical signs are of interest often because of the reaction of the diaphragm. Littlen's sign, the shadow of the diaphragm moving during respiration, is very much less pronounced on the affected side than on the other side. Limitation of the movement of the diaphragm can be demonstrated by percussion, marking on the skin with a dermatographic pencil the upper and lower limits of pulmonary resonance on deep inspiration and expiration, which is normally on the left side about a centimeter greater than on the right. If there is an extension upwards through the diaphragm of the inflammatory products, an acute pleurisy develops. This tends still further to immobilize the diaphragm. The pleurisy may be of the plastic type or may be primarily followed by the outpouring of fluid, usually in relatively small amounts. Under any circumstances, whether plastic or fluid, there will be further dullness on percussion, diminished tactile fremitus, vocal resonance and distant sounds, but with maintenance of normal respiratory rhythm. Later in the course of the condition there may be marked elevation of the diaphragm, which can be confirmed by the high level of liver posteriorly, or superiorly in a certain proportion of cases.

Diagnosis of subphrenic abscess is evidently extremely difficult. This would explain the high mortality rate of the condition because were the surgeon gifted with eyes on the end of his fingers, he might be able to localize the area of suppuration and if this were done relatively early, he would not be obliged to operate upon a patient worn out and worn down by a long continued illness.

PYLEPHLEBITIS.

Pylephlebitis occurs in the great majority of cases secondary to acute suppurative lesions in and around the appendix. It is responsible for some 0.1 of 1 per cent to 5 per cent of patients dying of acute appendicitis. It is the most common cause of he-

TABLE II
INCIDENCE OF PYLEPHLEBITIS IN
ACUTE APPENDICITIS¹.

Author	Cases of Acute Appendicitis	Cases of Pylephlebitis	Per Cent of cases
Stillmann	545	2	.14
Hoffman	4,000	7	.17
Moscowitz	1,529	7	.45
Brutt	2,500	15	.61
Gerster	1,187	9	.76
Quertz	533	4	.75
Clairmont and Meyer	1,187	4	.33
Fitz	257	11	.4
(Suppurative)			
Gibson	782	1	.13
Braun	600	8	1.3
Colp	2,841	9	.3
Reock	147	2	1.3
Bell	1,726	8	.46
Petren	170*	14	8.2
Armstrong	546*	28	5.1
Langdon-Brown ..	9,494*	12	.12

*Autopsy Cases.

patic abscess in non-tropical countries. In addition to portal pylephlebitis, it is, of course, possible to have ineffective emboli carried from the appendiceal veins to the liver without involvement of the vein itself. This, however, seems to be rare.

SYMPTOMS.

Again given the patient who has had an acute appendicitis, the possibility of acute pylephlebitis is considered when the patient has a markedly rapid rise in temperature accompanied by severe chills and an increase of the local symptoms. The marked constitutional reaction is indicative of septic material entering the portal circulation, possibly the general circulation. These severe chills seem to be the most characteristic features of the disease. Some authors go so far as to say that the severe chill is a pathognomonic sign of portal empyema when there is an ineffective pro-

cess in the area drained by the portal vein. Chills are, of course, followed by fever and profuse sweats. There is frequently pain in the liver region and the liver is enlarged and tender. As a result of the suppurative hepatitis the enlargement of the liver may be so great as to push the diaphragm upward and give to an exaggerated degree the diaphragmatic phenomena just mentioned in conjunction with subphrenic abscess.

The condition of pylephlebitis is a difficult one to relieve. The most important factor is early and prompt operation of the suppurative appendix when marked fluctuation in the temperature, severe chills, and high leukocytosis are present.

AMEBIC ABSCESS.

The third type of liver infection, the amebic abscess, is the one which is more familiar to the clinician and internist than are the other two, certainly, at least, in our section of the country. As a matter of fact, the great majority of the abscesses of the liver are amebic, but it does not necessarily follow that because a man has amebic dysentery that he is going to develop an amebic abscess. Statistical studies have been made of dysentery of the amebic type in the tropics and elsewhere and as do statistics so often, these figures vary considerably. Simon (Tice's Practice) says that hepatic abscess occurs in at least 20 per cent of the fatal cases of amebic dysentery. These figures, however, are very much higher than is the actual instance of the condition, because there are a large number of carriers of *Entameba histolytica* who rarely develop symptoms of any kind, and there are a considerable number of patients who never have very much more than the slight diarrhea. In approximately one hundred cases that I have seen, a liver abscess occurred in a little over 2 per cent of these cases.

The first liver abscess that I saw was in Philadelphia. A tentative and presumptive diagnosis was made of gumma of the liver and the patient was given active anti-syphilitic treatment. Only after failure of the active treatment to eradicate the presumed syphilis, did the thought occur that the condition might be an abscess.

Hepatic abscess of the liver may be divided into two types, and utilizing the classic description of aneurysm, the abscess may be one of signs or one of symptoms. However, it is impossible to draw a clear cut line between the two. As may be inferred, the abscess of signs is one of comparatively little constitutional reaction on the part of the patient. The liver is enlarged on palpation and by percussion, and it may be that the abscess will actually point towards the anterior abdominal wall.

The abscess of symptoms is the one in which we have the most typical picture. The patient has fever, sometimes considerably elevated, chills and night sweats. Pain is frequently present and this pain because of the involvement of the diaphragm may be referred to the neck or shoulder region. While the shoulder pain is spoken of as *the* referred pain of liver abscess, it would seem that neck pain is somewhat more common. With this neck pain there is associated skin hyperalgesia. This type of abscess is the one in which the acute hepatitis has gone on rapidly to suppuration. The abscess of signs is usually the one which has developed slowly, insidiously, and has a thick capsule so that systemic absorption is reduced to a minimum.

The amebic abscess, it is true, is usually single, but there is no reason to feel definitely and positively that this is going to be the case, because multiple abscesses are apparently reasonably common. Approximately seven out of ten abscesses occur in the right lobe. The only explanation for this is that the right lobe is considerably larger; also it is supposed that that the intestinal blood goes largely to the right

lobe of the liver. The right lobe abscesses have a tendency to point upward toward the diaphragm and if there is rupture from the diaphragm into the lung, many complications may occur, even a hepato-, bilio-, tracheal fistula with bile appearing in the sputum. This is rare.

Frequently the abscess may be a combination of the two types mentioned above. It is this type that so frequently gives the very misleading physical signs of pleurisy. The abscess comes in close contact with the diaphragm, infected material is carried by way of the lymphatics through the pleura and a pleural reaction occurs. This may occasion a frank pleural effusion or more than likely it may occur that there is no outpouring of fluid but merely a proliferative response to injury. Under any circumstances, both conditions will cause dullness on percussion or at least impairment of percussion, a diaphragm which is immobile or movement is very limited. This particular physical sign is sometimes hard to demonstrate because of the inability to differentiate between liver dullness and pleural dullness. The same statement applies to the frequently mentioned irregular line of dullness of the upper border of the liver posteriorly. Naturally with the impairment of percussion, breath sounds are found to be weakened and tactile fremitus is diminished. Frequently the vocal resonance is least impaired.

It seems hardly necessary to reiterate the oft-made statement that abscess should be diagnosed before rupture through the diaphragm or before bulging and fluctuation take place. This may be true, but nevertheless, there is frequently considerable difficulty in arriving at a diagnosis, particularly if the patient is not seen relatively early in the disease, when there is an absence of leukocytosis, and when there are no amebas in the stools.

SUMMARY.

There are three important etiologic factors responsible for suppuration in or

about the liver, excluding infection of the bile passages. A hepatic amebic abscess is the most common, followed in order by subphrenic abscess and portal pyelophlebitis. As the infection is usually in more or less close relation to the diaphragm, physical signs, including here the ordinary diaphragmatic phenomena, may be more definite in the thorax than in the abdomen.

II. RADIOLOGICAL SIGNS OF SUBDIAPHRAGMATIC ABSCESS*.

AMEDEE GRANGER, M. D.,†

NEW ORLEANS

The principal radiological sign of subdiaphragmatic abscess is an abnormal elevation of the diaphragm, and as this must of necessity cause dullness over the lower region of the thorax it is very easy to understand why, given an incomplete or unreliable history, so many of these cases are sent to the radiologist with a clinical diagnosis of unresolved pneumonia, empyema or pleural effusion.

Two good radiographs, one a P. A. and the other a lateral view, preferably made at a target-plate distance of six feet and with the patient standing or sitting, or a thorough fluoroscopic study will show with certainty that the pathological process is above or below the diaphragm; and in the rarer cases with pathology both above and below the diaphragm this will be revealed also.

The radiological examination having established the fact that the pathology is subdiaphragmatic, let me remind you that this examination forms an integral part of the whole diagnostic procedure, and that although at times the most important part, it is comparatively rare that a correct diagnosis can be made from the radiological examination alone, without the

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†From the Department of Radiology, Graduate School of Medicine, Tulane University and Department of Radiology, Charity Hospital.

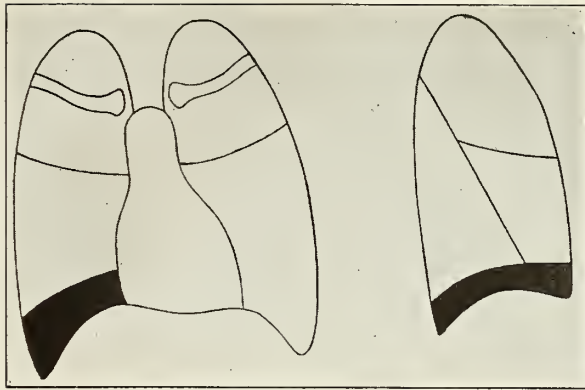


Fig. I. Schematic reproduction of a radiograph of a sub-diaphragmatic abscess resulting from a liver abscess.

knowledge of certain correct and essential clinical data. And these should be obtained and correlated with the radiographical findings before the latter are interpreted in terms of pathology and conclusions are drawn.

In our experience the most frequent cause of sub-diaphragmatic abscess was abscess of the liver, but it is necessary to consider such causes, as visceral perforations, perinephritic abscess, infected large hematoma resulting from contusion of the back and empyema necessitates pointing through the diaphragm, and to exclude them before making a final diagnosis of sub-diaphragmatic abscess, resulting from liver abscess.

This has not proved difficult when a careful physical examination was made and a pains-taking history was obtained.

I desire to particularly call your attention to a type of elevation of the diaphragm which I have never seen except when the sub-diaphragmatic abscess was due to a liver abscess. Please note (Figure 1) in the schematic reproduction of a typical radiograph of a case of sub-diaphragmatic abscess resulting from liver abscess, besides the elevation of the diaphragm, the obliteration of the cardio-phrenic angle in the P. A. view and of the anterior costo-phrenic angle in the lateral view.

Our experience at the Charity Hospital since first I noticed this sign about six years ago, would seem to justify my belief

that it is diagnostic of sub-diaphragmatic abscess secondary to liver abscess.

The next schematic reproduction (Figure 2) is of a typical radiograph of a sub-diaphragmatic abscess arising as a result of a more or less general peritonitis from any of the causes previously enumerated including abscess of the liver. Please note that in this instance it is the costo-phrenic (instead of the cardio-phrenic) angle which is obliterated in the P. A. view and the posterior costo-phrenic (instead of the anterior costo-phrenic) angle which is obliterated in the lateral view.

In cases of liver abscess without sub-diaphragmatic abscess the diaphragm was found elevated with the costo-phrenic and cardio-phrenic angles diminished, but not obliterated.

And in still other cases of liver abscess without sub-diaphragmatic abscess a small but distinct bulging or pointing upwards into the lower lung field (Figure 3) was seen. A gumma of the liver could produce an identical picture, but a fluoroscopic examination would show that the movement of the diaphragm was not restricted to nearly the same degree that it would be if the case was one of liver abscess.

When there existed a distinct reaction in the pleura or in the lung surrounding the localized bulging of the diaphragm and liver it was predicted correctly that rupture into

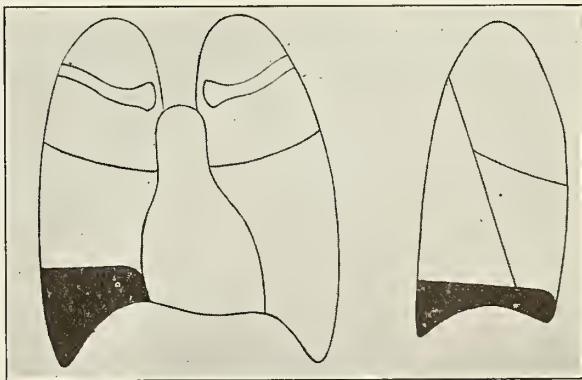


Fig. II. Schematic reproduction of a radiograph of a sub-diaphragmatic abscess resulting from various causes including liver abscess.

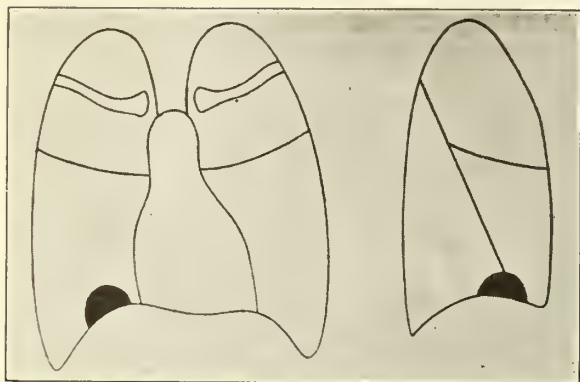


Fig. III. Schematic reproduction of a radiograph of a liver abscess pointing upward.

the lung would take place within 24 to 72 hours.

We believe with Pancoast that the apparent lobar pneumonias in cases of liver abscess (Figure 4) are not true lobar pneumonias, but exaggerated lung reactions due to the proximity of the abscess to the upper surface of the liver. The temperature charts are not those of a lobar pneumonia. We know that extensive areas of congestion and edema can surround any large abscess and that edema of the skin and subcutaneous tissue may overlie a liver abscess. It seems reasonable that a similar reaction could arise in lung tissue. Moreover a moderate amount of clear fluid is frequently found in the pleural cavity. Therefore, we have adopted the suggestion of Dr. Eliason and call these lung reactions a pulmonitis.

ILLUSTRATIVE CASES

1. Abscess of the liver.

G. G.—White male, aged 34 years. Clinical diagnosis: Abscess of liver. Roentgen-ray report No. 124363, August 10, 1929: Right leaf of the diaphragm elevated with diminution but not obliteration of its angles.

The most probable cause is a hepatitis with or without abscess formation.

Operation: 8-13-29.

Incision and drainage of a liver abscess. Motile amebae found in scrapings from the wall of the abscess cavity.

2. Abscess of the liver, on point of rupturing into the lung.

F. H.—Colored male, aged 33 years. Clinical diagnosis: Right pleural effusion. Roentgen-ray report No. 115417, March 4, 1929: No evidence of fluid in the pleural cavity. The abnormally high position of the right leaf of the diaphragm with wooly outline, the definite evidence of inflammatory reaction of the pleura and the enlargement of the lower peri-bronchial lymphatics would all seem to indicate that the process is caused by a liver abscess, which is probably near the point of rupturing into the lung.

In the afternoon of March 5, Dr. Mattingly reported that the patient was expectorating what looked like liver pus.

On March 6, Dr. Jamison aspirated 50 c.c. of typical anchovy sauce fluid from the liver.

Later that day he was operated on under ether anesthesia and about 1½ pints of pus evacuated from his liver.

3. Abscess of the liver—pointing.

V. B.—White male, aged 48 years. Clinical diagnosis: Gastric carcinoma. Probable liver abscess. Roentgen-ray report No. 108025, Oct. 8, 1928: G. I. series showed no evidence of organic pathology of the stomach and bulb. The stomach is seen entirely to the left of the spine. The right leaf of the diaphragm is elevated, and fluoroscopic study showed that its movement was markedly limited. Roentgen-ray report No. 109422, Nov. 3, 1928: Localized bulging (cone shape) in the posterior half of the right leaf of the diaphragm, with adhesions between the diaphragmatic and visceral pleurae. These signs would indicate a liver abscess pointing upward.

On Nov. 22, 1928, the liver was aspirated and pus found.

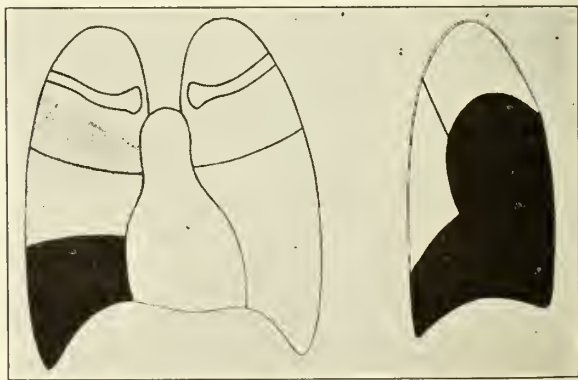


Fig. IV. Schematic reproduction of a radiograph of a sub-diaphragmatic abscess resulting from a liver abscess and complicated with a pulmonitis of the lung.

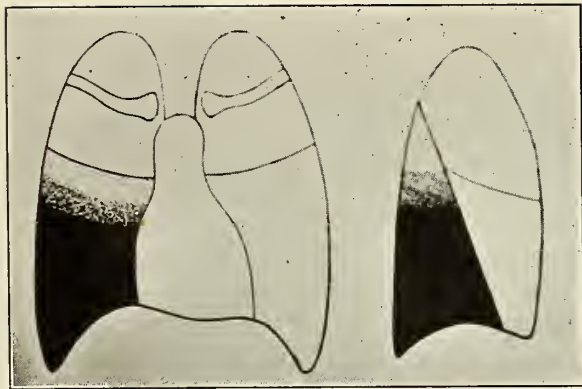


Fig. V. Schematic reproduction of a radiograph of a lobar pneumonia of the lower lobe of the right lung.

4. Sub-diaphragmatic abscess from abscess of the liver.

E. S.—White female, aged 20 years. Clinical diagnosis: Sub-diaphragmatic abscess. Roentgen-ray examination, March 19, 1929, showed a marked elevation of the diaphragm with complete obliteration of the anterior costophrenic angle and a localized pulmonitis of the anterior region of the lower portion of the right lung. This clearly indicated a sub-diaphragmatic abscess due to liver abscess with secondary reaction if not actual infection of the base of the right lung.

March 27 the patient began expectorating some thick brownish purulent material.

5. Sub-diaphragmatic abscess from liver abscess.

N. C.—White male, aged 30 years. Clinical diagnosis: Liver abscess. Roentgen-ray report, No. 124009, Aug. 1, 1929: The marked elevation of the right leaf of the diaphragm, with clear lung field above it, and the marked diminution of the costo-diaphragmatic angles in the axillary zone of the P A view and the posterior zone of the lateral view indicate clearly a sub-diaphragmatic collection of fluid or pus. Careful history should determine whether this process results from a liver abscess or some other cause.

At operation Aug. 3, 1929, a large quantity of very thick yellow pus was evacuated, and digital exploration revealed an irregular cavity which was unquestionably in the liver.

6 Sub-diaphragmatic abscess from abscess of the liver complicated by a pulmonitis of the right lower lobe.

V. M.—White male, aged 40 years. Clinical diagnosis: Abscess of the liver. Roentgen-ray report No. 119834, Nov. 18, 1929: Right diaphragm markedly elevated and consolidation of the lower lobe of the right lung from a pulmonitis, most prob-

ably due to extension of infection or rupture of a sub-diaphragmatic liver abscess.

Operation on May 26, 1929 when a large amount of pus was evacuated from a liver abscess.

Roentgen-ray examination on June 6, 1929, revealed the right diaphragm much lower than at the last examination and the pulmonitis cleared up except for a small area of consolidation in the lower and posterior portion of the right lower lobe.

7. Abscess of liver—later with sub-diaphragmatic abscess.

A. D.—White male, aged 8 years. Clinical diagnosis; empyema pleurisy. Roentgen-ray report No. 127063, Sept. 30, 1929: There is no evidence of pathology in the thorax. The right diaphragm is elevated and its angles are diminished. The most probable cause is abscess of the liver.

A few days later an abscess in the liver was opened and drained. As the patient did not do as well as was expected he was re-examined on Nov. 26, 1926, when roentgen-ray report No. 128389 read—The increased elevation of the right diaphragm with obliteration of the cardio-phrenic angle would indicate a sub-diaphragmatic abscess arising from liver abscess.

At operation a day or so later this diagnosis was confirmed and the abscess drained.

CONCLUSIONS.

Abnormal elevation of the diaphragm is the principal and most constant radiological sign of sub-diaphragmatic pathology.

Elevation of the diaphragm with obliteration of the cardio-phrenic angle in the P. A. view and of the anterior costo-phrenic angle in the lateral view means a sub-diaphragmatic abscess secondary to a liver abscess.

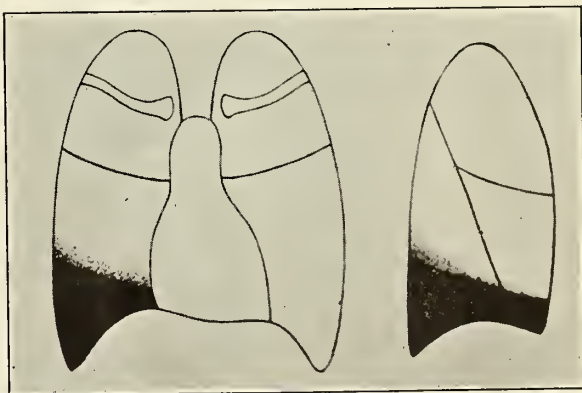


Fig. VI. Schematic reproduction of a radiograph of an empyema.

III. SURGICAL TREATMENT OF SUBPHRENIC INFECTIONS.*

ALTON OCHSNER, M. D.†

NEW ORLEANS.

Lesions within the subphrenic space have been of considerable interest to surgeons for a long period of time. Because of the relative inaccessible location, protected by the thoracic cage, even though lying within the abdominal cavity, these processes immediately below the diaphragm have been difficult to diagnose and also to treat. Of surgical interest subdiaphragmatic infections are most important, first, because these inflammatory lesions follow a suppurative process within the abdominal cavity, and, second, because the treatment of the condition is entirely surgical, even though the majority of cases require no operation.

The subphrenic space may be designated as that space located between the diaphragm above and the transverse colon and transverse mesocolon below⁽¹⁾. The inclusion of the area beneath the liver and between it and the transverse colon and transverse mesocolon is desirable, from a surgical standpoint, because not infrequently both supra- and infra-hepatic inflammatory lesions occur concomitantly. A knowledge of the anatomical spaces in the subphrenic area is essential, as the surgical treatment, including the operative approach, is dependent upon the location of a subdiaphragmatic infection. The supra-hepatic space is divided into a right and left space by the falciform, or suspensory, ligament. The lower free edge of this ligament is continued to the umbilicus as the round ligament. The coronary ligament is a reflection of the peritoneum from the inferior surface of the diaphragm to the superior surface of the liver. The left prolongation of the coronary ligament,

or left lateral ligament, passes backward to lie at the posterior edge of the left lateral lobe so that on the left side there is only an anterior superior space. The right prolongation, the right lateral ligament, passes somewhat anteriorly, dividing the right superior space into a larger anterior and a smaller posterior space. The retroperitoneal space is that area located within the limits of the coronary ligament and in contact with those portions of the liver and diaphragm which are not covered by peritoneum. The infra-hepatic space, which is located between the liver above and the transverse colon below, is divided into a right and left inferior space by the round ligament and the ligament of the ductus venosus. The left inferior space is again divided into an anterior and a posterior space by the lesser omentum, the space located posterior to the lesser omentum, being the lesser peritoneal cavity, and that anterior being the left anterior inferior space.

The "right posterior superior" space is the most frequent site of an inflammatory focus in the subphrenic area. In a series of 78 cases of subphrenic abscess reported by Fife⁽²⁾ and Love⁽²⁾ from the London Hospital the "right posterior superior" space was involved in 20 instances, an incidence of 37.1 per cent. An abscess in the "right posterior superior space" is frequently complicated by a similar suppurative process beneath the liver in the "right inferior" space. The extra peritoneal space, formed by the coronary ligament on the superior surface of the liver, was the site of an abscess formation in 20 of Fifield and Love's⁽²⁾ cases, (25.6 per cent).

The etiology of subphrenic infection has been discussed by Dr. Musser, but, even at the risk of repetition, I wish again to emphasize the fact that the most frequent etiological agent in subphrenic abscess is acute appendicitis, the incidence of this complication in acute appendicitis varying from .3 per cent to 4.9 per cent (Bancroft⁽³⁾, Stillman⁽⁴⁾, Beekman⁽⁵⁾, Clair-

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mont and Meyer⁽⁶⁾, Cutler⁽⁷⁾, and Suermondt⁽⁸⁾). Most cases of subphrenic infection subside spontaneously without suppuration, so that inflammatory processes occur in the subphrenic space much more frequently than statistics, based on the finding of localized abscesses, indicate. In a group of 972 cases of acute appendicitis Neuhof⁽⁹⁾ reported 15 such cases of subphrenic infection which did not progress to suppuration. Similar cases have been reported by Lee⁽¹⁰⁾, Clendening⁽¹¹⁾, and the author⁽¹²⁾. The treatment of such an infection is non-operative, and consists of rest, immobilization of the affected part, as well as the homolateral hemithorax, by means of adhesive plaster, and the application of heat locally. Early in the condition it is impossible to predict whether suppuration or absorption will ensue. Not infrequently subphrenic, non-suppurative inflammatory processes are not recognized clinically by the attending physician, because of the relatively few signs and symptoms presented, and, as has been emphasized by Dr. Musser, the diagnosis of a frank subdiaphragmatic suppuration is often delayed for a considerable period of time.

The prognosis in subphrenic abscess is bad. The mortality in the reported cases varies from 23 to 100 per cent (Douglas⁽¹³⁾—33 per cent; Hodges⁽¹⁴⁾—50 per cent; Eicher and Kibzey⁽¹⁵⁾—50 per cent; Bauman⁽¹⁶⁾—66 per cent; McEachern⁽¹⁷⁾: operated cases—33 per cent, non-operated—75 per cent; Tuft⁽¹⁸⁾—66 per cent; Lotsch⁽¹⁹⁾: operated cases—33 per cent, unoperated cases—100 per cent.) Fifield and Love⁽²⁾ report a general mortality of 50 per cent in their cases. Of 59 cases operated upon there was a mortality of 32 per cent. Lockwood⁽²⁰⁾ states that in unoperated cases there is a mortality of from 85-100 per cent, whereas in the cases subjected to operation there is a mortality of 66 per cent. The author⁽¹²⁾, in a previous communication, reported 15 cases with only one fatality, a mortality of 6.6 per cent.

The mortality in subphrenic abscess has, in the past, been considerably higher than in residual abscesses located elsewhere in the peritoneal cavity. This higher death rate in subphrenic abscesses is probably due to several factors: first, because of the relatively inaccessible location of the abscess, a diagnosis is made late, i. e. not until after a toxemia has become well established; second, because of the intimate relation of the inflammatory process to two large serous cavities, the possibility of an infection occurring in either one or both of these cavities, as the result of rupture or extension, is great. This applies especially to the pleural cavity, as an infection of the pleural cavity occurs invariably in cases of subphrenic abscess which have existed a long time. The high mortality following surgical drainage of subphrenic abscess has in the past probably been due to contamination and subsequent infection of a previously uninvolved serous cavity. Even though empyema or peritonitis in themselves may not cause the death of the individual, an infection of either one of these large serous cavities, in addition to the localized suppurative process in the subphrenic area, may produce death.

The surgical approach to a subphrenic abscess offers certain technical difficulties because of the location of the process. The most frequently employed routes of drainage have been, in the past, transpleural or transperitoneal. The drainage of any infected area through a non-infected serous cavity violates all surgical principles. The drainage of a subphrenic pyogenic abscess through an uninvolved pleural or peritoneal cavity is as unsurgical as drainage of a pulmonary abscess through an uninvolved pleural cavity. Fifield and Love⁽²⁾ report a mortality of 47.3 per cent in those cases of subphrenic abscess which were drained transpleurally and a mortality of 23.8 per cent in those cases which were drained through the peritoneal cavity. In order to prevent an infection of either the pleural or peritoneal cavity, it is impera-

tive to drain a subphrenic abscess without entering either of these cavities, or at least without entering an uninvolved portion of either serous cavity. This can be readily accomplished in the majority of cases. An abscess located in the "right posterior superior space" (which is the most frequent site of a subphrenic abscess) may be drained retroperitoneally without opening either the pleural or peritoneal cavity. The technic of this operation has been described in detail in previous publications⁽¹⁾ ⁽¹²⁾. Briefly it consists of resection of the twelfth rib on the right side, following which a transverse incision is made through the soft parts at the level of the spinous process of the first lumbar vertebra. A transverse incision made at this level will prevent injury to the pleura. The incision is carried down to the renal fascia, which is continuous above with the peritoneum. The renal fascia is followed upward to the peritoneum, which is then readily separated from the under surface of the diaphragm. A needle is inserted into the subhepatic region, in order to determine whether an associated subhepatic abscess exists. If no pus is obtained, the separation of the peritoneum from the undersurface of the diaphragm is continued until the abscess on the upper surface of the liver is encountered. By means of the finger the abscess cavity is opened and drained without passing through uninvolved peritoneum or pleura. In this manner an abscess located in the right posterior superior space and also one in the right inferior space may be drained at the same time. In those cases in which an infection of the pleural cavity is suspected a needle may be introduced into the costophrenic angle before opening the subphrenic abscess, in order to determine whether suppuration has occurred in the pleural cavity or not. If such has occurred it is possible to drain the empyema through the same incision and at the original operation by incising the attachment of the diaphragm and the pleura in the costophrenic angle. Cases of empyema un-

associated with subphrenic abscess have been treated in this way with very good results by Nather and the author⁽²¹⁾. Two large fenestrated rubber tubes are introduced into the subphrenic abscesses and allowed to protrude through the wound. In cases in which empyema coexists similar tubes are introduced into the pleural cavity in a like manner.

Subphrenic abscesses which point anteriorly, and which may either arise from the "right anterior superior" space or the "left anterior inferior" space, may be drained through the anterior abdominal wall in the manner described by Clairmont⁽²²⁾. An incision made along the costal margin is carried down to the peritoneum. The peritoneum is then carefully separated from the anterior abdominal wall and the under surface of the diaphragm until the inflammatory mass is encountered. The abscess is opened bluntly. In this way again the abscess may be drained without contaminating an uninvolved peritoneal or pleural cavity. Fortunately in most of the subphrenic infections pointing anteriorly adhesions are already present between the abscess cavity and the parietal peritoneum, a circumstance which facilitates drainage.

INTRA-HEPATIC ABSCESES.

In considering suppurations within the liver it is necessary to differentiate between the pyogenic and the amebic abscess because of the difference in indications for treatment. Amebic abscess is, fortunately, seen less frequently than previously, due to the efficient anti-amebic treatment, and the treatment of this type of abscess should in reality consist only of prophylaxis. Once a destruction of liver substance has occurred, some type of drainage is indicated. There has been, and still is, considerable controversy about the type of drainage that should be employed in cases of amebic liver abscess. The results obtained by repeated aspiration in the hands of such men as Sir Leonard Rogers⁽²³⁾, Thurston⁽²⁴⁾, and Manson-Bahr⁽²⁵⁾ have been, however, much better than any of

those which have been obtained by open drainage. Rogers⁽²³⁾ found in 75 out of 80 cases (86%) of liver abscess at the Calcutta Hospital that the pus obtained from the liver abscess was sterile when the abscess was first opened. On the other hand, cultures made of the pus from the cavity a few days after it had been opened invariably showed secondary infection. He collected 2,661 cases of amebic liver abscess which were treated by the open method, of which number 1,511 died, a mortality of 56.8 per cent. 111 cases were treated by aspiration, together with an amebicide, of which number 16 died, a mortality of 14.4 per cent. The striking change for the worse following open drainage of an amebic abscess in a patient who was not extremely toxic before, is sufficient to make any surgeon hesitate to attempt open drainage of a sterile amebic abscess.

According to Ludlow⁽²⁶⁾, an amebic liver abscess is located in the right lobe only, in 93 per cent, in the left lobe only, in 2 per cent, and in both lobes in 5 per cent of the cases. This author recommends aspirating the abscess over the point of greatest tenderness and swelling, which is often the 9th interspace in the anterior axillary line. As soon as pus has been encountered with the aspirating needle, the needle is replaced by a trocar, through which the contents of the abscess may be aspirated. In cases in which the contents cannot be aspirated because of their consistency Ludlow advises the introduction of 20 to 30 c.c. of Dakin's solution. The contents of the abscess are completely evacuated at the time of the aspiration. Subsequent aspirations are performed whenever necessary. Anti-amebic treatment is continued throughout this time.

According to Pannett⁽²⁷⁾ open operation is indicated: (1), when the abscess is located in the left lobe; (2) when the abscess bulges anteriorly, because of the usual absence of adhesions which will permit a spilling of the contents of the abscess into peritoneal cavity; (3), when aspira-

tion has failed; and (4), when, after aspiration, pyogenic organisms are found in the pus. An additional indication for open drainage may be the localization of the abscess in the dome of the liver, an abscess which cannot be aspirated easily. In such an instance a transpleural approach is justifiable because of the sterility of the contents of the abscess. Rogers⁽²³⁾ found that of his series of cases 40.7 per cent were deeply seated high beneath the ribs. In performing either a transperitoneal or transpleural operation it is essential that contamination of the serious cavity be avoided, even though in the majority of instances the abscess contents are sterile. In cases in which open drainage of an amebic abscess has been performed strict asepsis during dressing of the wound is not only essential but imperative, in order to prevent secondary contamination of the wound with pyogenic organisms. In Rogers' cases in which an open drainage had been performed secondary infection invariably ensued in spite of rigid precautions to prevent such infection.

The treatment of amebiasis is extremely important and essential.

Pyogenic liver abscesses: Aside from amebiasis, the most frequent cause of liver abscess is appendicitis. Liver abscesses, either multiple or single, occur in from .5 per cent to .7 per cent of all cases of acute appendicitis and in about 5 per cent of all fatal cases of acute appendicitis. Infection usually gains entrance to the liver from the appendix or other abdominal viscera by way of the portal vein. Multiple liver abscesses, as a result of portal infection originating in a sigmoidal diverticulitis, have been reported by Whyte⁽²⁸⁾, Foggie⁽²⁹⁾, Kramer and Robinson⁽³⁰⁾. Unfortunately, following a portal thrombophlebitis numerous radicles of the portal vein within the liver become involved, producing multiple liver abscesses. Occasionally there occur isolated abscesses which may be drained surgically. Brugemann⁽³¹⁾, in 1917, found 35 solitary liver abscesses following appendicitis, in

addition to one of his own which he reported. Recently similar instances have been reported by George⁽³²⁾ and Barnes and Pearson⁽³³⁾. The majority of such abscesses occur in the right lobe. The cause of a solitary liver abscess, following an intra-abdominal suppuration and subsequent involvement of the portal vein, is unknown. Quénu and Mathieu⁽³⁴⁾ believe that an aseptic embolus may reach the liver and produce a focus of necrosis, which may become infected in the course of a bacteremia.

The treatment of solitary liver abscesses is operative incision and drainage. Here, too, as in extra-hepatic abscesses, it is imperative to avoid contaminating uninvolved serous cavities in order to prevent infection of these spaces. A liver abscess, according to its location, can either be drained retroperitoneally, according to the technic described above for subphrenic abscess, or anteriorly. In the latter instance very frequently no adhesions are present between the liver and the anterior parietal peritoneum. In such an instance one may resort to either one or two methods of treatment. At the primary operation the abdominal cavity is carefully packed away from the drainage site, following which the abscess is opened and a tube introduced. Preferably, however, the wound should be packed down to the liver in the region of the abscess for a period of 24 to 48 hours. In this way adhesions will be formed which will wall off the sinus from the general peritoneal cavity. Not infrequently in superficially located abscesses rupture will occur spontaneously following such packing. If, however, this does not occur within 48 hours, the abscess should be opened. The post operative treatment of the pyogenic subphrenic abscess, whether located intra- or extra-hepatically, consists of careful observation of the patient. Dressings should be changed at least once daily and often several times a day. After the discharge has abated one of the fenestrated tubes is removed. Before removal of the second tube it should be clamped for a

period of 24 to 48 hours, in order to determine whether symptoms recur or not. As emphasized above, meticulous care must be exercised in the dressing of those cases of amebic liver abscess in which open drainage has been done.

SUMMARY

(1) Subphrenic infections are more difficult to diagnose and treat than other localized intra-abdominal infections.

(2) Subphrenic extra-hepatic infections occur not infrequently during the course of an intra-peritoneal infection. The majority of these cases do not progress to suppuration but subside spontaneously.

(3) Subphrenic extra-hepatic abscess is frequently diagnosed and treated late. The mortality in the past has been high.

(4) Surgical drainage without contaminating an uninvolved peritoneal or pleural cavity will lower the mortality in subphrenic abscess. The mortality in the author's series is 6 per cent.

(5) Amebic liver abscesses are usually sterile. Because of the danger of secondary infection, with its accompanying toxemia, which invariably ensues open drainage of these abscesses, they are best treated by repeated aspirations and the administration of amebicides.

(6) Pyogenic hepatic abscesses usually are multiple and follow a thrombophlebitis of the portal vein. Occasionally solitary hepatic abscesses occur. These, when surgically drained without infecting an uninvolved serous cavity, present a good prognosis.

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DISCUSSION OF THE PAPERS OF DRS. MUSSER,

GRANGER AND OCHSNER.

Dr. J. G. Snelling (New Orleans): In this series of cases that has just been reported by Doctors Granger, Musser and Ochsner, I happen to have had two under my direct supervision, and I just want to mention a few of the facts to lend my say to the method that has been discussed and to some of the points that have been brought out.

This last case Dr. Granger showed us, a little boy who is now in Ward 158, was seen in consultation in a pediatric service. However, after roentgen-ray findings by Dr. Granger, and together with the laboratory and clinical findings, a rather positive diagnosis of liver abscess was made. The boy was very septic, ran a temperature of 103° to 104° daily and was quite run down, as he would be after a week or so of this condition. The previous history in this case was not as good as we have sometimes gotten. However, I gleaned from the mother that the child had had, about seventeen days previously, an attack of cramps in the abdomen and some little diarrhea, which lasted for two or three days and then he was taken with a chill and higher fever and pain in the upper right part of abdomen. He was brought to the hospital with the tentative diagnosis of possible empyema, and later on a possible liver involvement was considered. Subsequently, the diagnosis was made as I have stated.

This child I had the opportunity of operating on, and used the method just described by Dr. Ochsner. I have had occasion to use this procedure on about six cases in the last two years, four of which were pyogenic and two of the solitary type. One of the pyogenic cases died, but autopsy in this case showed multiple liver abscesses, one of the largest of which we had been successful in draining. I am counting the case under discussion as one of recovery, because at the present time he is doing so nicely, having been temperature free for several days now.

It illustrates very nicely the point brought out by Dr. Granger in showing the obliteration of the costophrenic angle, and with diminution but not obliteration of the cardio-hepatic angle in the liver abscess. This child I operated on for liver abscess and approached through the bed of the twelfth rib. I was able to aspirate a small amount of pus, just enough to get into the aspirating needle, about two inches within liver substance. I could feel the needle plunge into the abscess cavity by the difference in density. Going on this finding then I entered the liver with blunt dissection and evacuated about six ounces of thick greenish yellow pus, proving to be a liver abscess. The little chap was sent to the ward and seemed to improve; however, his temperature did not drop to normal. I was then confronted with the possibility of why he did not improve more rapidly. I considered the possibility of multiple abscess of the liver and the possibility of septicemia. We had blood cultures made which were negative and strengthened the child with treatment—transfusion among other things. After procrastinating for eight or ten days, I decided to call the Roentgen-ray Department in for further consultation and we got the two pictures which Dr. Granger showed. I was then able to go back through the same incision, there being only granulation tissue present, and by blunt dissection I was able to break into a large sub-diaphragmatic abscess in the posterior space. That fits in with the occurrence in the posterior space in cases following disturbances in, or some infection of the gastro-intestinal tract. One other point which I think is illustrated is the fact that here was a child who was extremely septic and any other involvement would have been enough to push him over the brink. Having this tract there to go through, and being able to avoid both pleural and peritoneal cavities, was decidedly in his favor. Immediately after evacuation of the subdiaphragmatic he picked up and looks as though he will be well in quite a short while.

Dr. Urban Maes (New Orleans): I am called upon to do rather an impossible thing, namely, to contribute something to a subject about which the essayists, it seems to me, have already said all that there is to say.

Most experienced surgeons have no difficulty in making a diagnosis of suppurative conditions in and about the liver, because, as a rule, they are called to see the patients when the pathology is definitely established. We would be called earlier, I think, if the aphorisms were remembered more frequently that in continued fever of undetermined origin, it is a wise plan to suspect the liver. I can testify that I owe several successful early diagnoses of my own to the recollection of this fact.

Authors differ surprising in the percentages they assign to the various causes for subphrenic abscess or suppuration about the liver. One of the older writers, I remember, considers 80 per cent of them due to gastric or duodenal ulcer. Others are inclined to consider septic processes in the abdomen as a more frequent cause. In the opinion of others age has something to do with the incidence, and it is Aschoff, I think, who states that because of the active lymphatic system in young subjects they most frequently exhibit a diffuse purulent peritonitis, while in older people the condition, like appendicitis, is of vascular origin. Indeed, in old people appendicitis is a frequent precursor of liver abscess, giving us the typical appendicular liver described by DeBovis and others of the French school.

In previous years, because I knew of no better way, it was my custom to use the trans-pleural approach, with a special technic that prevented the spill of pus into the peritoneal cavity. This method was sufficiently satisfactory for single abscesses but was not always safe for multiple ones, and I have gladly substituted for it the approach described by Dr. Ochsner, who, with his customary modesty, has omitted to say that he devised the technic himself.

A great proportion of the amebic abscesses of the liver are in the upper right lobe, and the reason for this has been clearly shown by Counseller and McIndoe of the Mayo Clinic: the right and left lobes of the liver are separate and distinct, their blood vessels do not communicate, and the larger portion of the blood supply is carried by the portal system directly to the right lobe. Hence the high incidence of infections in it, and the comparative immunity of the left lobe.

Amebic abscesses of the liver frequently appear without the classic preliminary symptoms of dysentery, diarrhea or bowel disturbance, and these cases, even when seen late, may be difficult to recognize, unless, as I have already pointed out, it is remembered that it is well to suspect the liver in all instances of continued fever of undetermined origin. Previous disturbances of the gastro-intestinal tract due to amebiasis are not always exhibited.

In these cases it is frequently necessary to get rid of a large amount of debris, so that the aspirating needle is entirely unsatisfactory and surgical management is necessary. It seems rather futile to take issue with such statistics as those of Rogers in regard to emptying the abscess with the syringe or the trocar.

These patients should not be dressed very frequently. It is my custom to fill the abscess cavity with some sterile material, preferably

balsam of Peru, with a sterile packing, and not to disturb the wound for at least a week. Every time it is disturbed, there is the risk of introducing fresh infection, and I have had no occasion, in the cases I have handled in this way, to regret my inactivity. Daily dressings are definitely contra-indicated.

Dr. George Herrmann (New Orleans): My experience with subdiaphragmatic abscess has been considerably limited. Within the last two months, however, I have had occasion to observe two cases in which the diagnosis was considered, but in which the proof was much more difficult to obtain than has been indicated this evening. The question always arises as to whether the process is above the diaphragm or below the diaphragm when both chest and abdominal symptoms present. The tendency is always to adhere to the clinical rule of considering one process responsible for the symptoms in both regions. It must not be forgotten that we may have totally unrelated pathological processes above and below the diaphragm on the same side. This was forcefully brought home to me this morning. One of our patients had a very definite pleurisy with a friction rub in the left axilla. He also had a palpable mass in the left upper quadrant, slight rigidity, tenderness, and fever of more or less septic type. Salicylates had been given for his chest condition and the temperature curve was modified. It was only after repeated questioning that he gave a definite history of regularly occurring chills and fever some weeks previously. Examination of the blood showed estivo-autumnal malarial parasites. These, of course, accounted for the mass enlarged spleen in the left upper quadrant.

Another patient, who is also in our ward at present, came in because of an attack of acute pain in the left upper quadrant, chills, and fever. He gave a very definite history of exposure to rain and cold, following which his pain in the upper left chest was noted. He also presented rigidity and tenderness of the left upper quadrant, considerable distention, and tenderness around the costovertebral angle on the left.

The roentgenologist was non-committal and made a diagnosis of diaphragmatic pleurisy in this case. There was very definite evidence of compression at the left base, dullness and distant breath sounds and rales. Here, again, we were faced with the question of whether we were dealing with one process or two.

Urinalysis showed pus in the urine. On the basis of this we considered the presence of an infectious or surgical kidney with a paranephric abscess that had become subdiaphragmatic. The chest signs persisted as has also the fever. Exploratory puncture had been advised, but we

hesitated because of the danger of undertaking such procedure.

These two cases seem to me to emphasize the fact that the diagnosis is by no means as simple as one might be led to believe. It is true that in the classical case, the symptomatology and clinical findings are clearly diagnostic as they have been presented, but it is rare, in my experience, at least, to find these processes of the classical type. When there is a question of subdiaphragmatic abscess, although an internist, I prefer to have a surgeon make an open exploratory incision rather than to blindly stick a needle into a body cavity where there is a possible pus cavity that is well walled off.

I would conclude by reiterating that it is quite possible, I believe, to have two distinct pathological processes—one above and one below the diaphragm on the same side; and the rules of always considering one diagnosis and one condition as accounting for both processes should not be iron bound.

Dr. C. W. Duval (New Orleans): I do not know that there is anything I can add, so thoroughly has the subject been covered by the essayists; however, it may be of interest to say a few words concerning the nature and route of infection in hepatic and perihepatic abscesses. Amebiasis and the pyogenic infections of the liver and the perihepatic space are secondary to a primary infection of the intestinal tract. Never in the amebic and rarely in the pyogenic are the liver lesions secondary to a pre-existing bacteremia.

The route by which the infectious agent is conveyed to the liver and to the region about the liver, is the portal vein or the lymphatics. Dr. Maes, quoting Aschoff, states that in the very young the infection travels to the liver by the way of the lymphatics, while with older subjects it goes by the veins. I doubt that age is a factor in determining the route of infection. Of course, it is quite evident that in all cases the metastasis either is through the lymphatics or veins because otherwise we would not get colonization of the infectious agent confined to the liver.

The kind of pathogenic agent is a factor of considerable importance from the standpoint of treatment and prognosis. More commonly subdiaphragmatic abscess is due to the colon bacillus and only rarely caused by the staphylo-streptococcal groups. When the infection is due to the latter it seldom remains localized but becomes a general infection which is not amenable to surgical intervention.

If ameba is the infecting agent it is well to bear in mind that the lesion produced in the liver is commonly solitary. Small multiple abscesses of the liver are almost always pyogenic. Though

both infections are characterized by what is termed an abscess, the amebic lesion is wrongly called because it is necrosis and not an acute inflammatory condition. In liver amebiasis it is only an abscess when there is a superimposed secondary pyogenic invasion of the amebic lesion. It is generally thought that the hepatic lesions in amebiasis is sterile in so far as pyogenic bacteria are concerned, and only after the so-called abscess is opened and drained does it become infected. While it is true that drainage permits of extraneous germs entering, we must not lose sight of the fact that the liver lesion is from the beginning a mixed infection. This is explained on the ground that the liver normally contains bacteria that are constantly passing through from the intestinal tract by way of the portal circulation. Such bacteria also account for the occasional purulent character of the necrosis in hepatic amebiasis.

Dr. J. Birney Guthrie (New Orleans): I feel that the opinion of everyone here tonight is that we have all been amply repaid for coming in listening to this symposium. I was a little disappointed to hear of the change in title of Dr. Musser's paper. "The Thoracic Physical Signs of Liver Abscess" was a title that appealed strongly to me.

As the diaphragm is pushed up, contrary to what we would expect, any change in density of the lungs is not manifest at the base, but at the apex of the lung. In this case we see by the radiograph that the right lung has been moved forward and upward by the underlying liver enlargement. Base of lung is pushed forward. We also see a change in the position of the heart which is pushed to the left also by the upward encroachment of the liver.

The alteration of the position of the heart's apex excepting as indicates often a change in the neighboring organs rather than a change in the heart itself.

In thoracic diagnosis, the determining of the position of the cardiac apex may lead us to the finding of some cause as in this case relatively remote from the heart.

Dr. Allen Eustis (New Orleans): Dr. Ochsner very correctly stated that the vast majority of cases of abscess of the liver which come to a surgeon are of long standing, and have apparently been neglected. This, however, should not be taken as a criticism of the medical man, as the diagnosis is often fraught with great difficulty.

If the abscess is confined to the liver only, the individual is often treated for typhoid fever; on the other hand, if the abscess perforates the diaphragm, pulmonary symptoms predominate, and even after rupture into the bronchus, this type is

frequently treated as tuberculosis. During my experience in rural practice I saw a great many cases of amebic abscesses of the liver, and it was often necessary to make the diagnosis without the aid of the roentgen-ray, which of course, at the present day simplifies the diagnosis very considerably.

In 1919 I reported the physical signs in this type of case, which I consider is pathognomonic of the condition, namely: bronchophony and pectoriloquy over the liver.

Dr. D. L. Watson (New Orleans): Will you excuse me, a family physician, attempting to offer any suggestion to the splendid discussions we have had here this evening? But abscesses of the liver due to amebae must be diagnosed from abscesses due to other causes.

The discussion has shown that about 80 per cent of all abscesses of the liver are either sterile or amebic. As a rule a sterile abscess is amebic whether the aspirated fluid shows it or not. Surgical procedure in amebic abscess is very dangerous and should be avoided if possible. The differential diagnosis is made by giving one grain emetine hydrochloride intravenously daily for about ten days and less often thereafter. The gradual improvement of the patient will eliminate other causes for the abscess. Emetine thus given will prove a specific for the abscess.

Emetine hydrochloride intravenously is a specific for amebiasis in any form.

Dr. A. L. Levin (New Orleans): It might be of interest to the members present here tonight to mention a point that was not discussed in connection with liver abscess; that sometimes presence of pus in the liver will give rise to a positive Wassermann reaction as a result of the lipid bodies present in the blood stream. A mistaken diagnosis of syphilis will be the result.

I reported a similar case about 15 years ago. A middle aged man developed upper abdominal pain and temperature which persisted for months. He was treated for paratyphoid. On my first examination, I noticed a bulging in the upper right abdomen, and on palpation there was a mass of doughy consistency. I advised him to see me the following morning for a gastric analysis. During the night, he applied hot poultices to the painful area. On the second examination, the mass had disappeared. The stomach tube revealed a quantity of pus and blood in the stomach. A roentgen-ray of the G. I. tract revealed definitely a double track leading into the stomach from the liver area. Every laboratory in the city gave a 4 plus positive Wasserman on the patient, for many months. Heavy doses of mixed treatment did not influence the positive Wassermann

reaction. A liver abscess was finally discovered in the left lobe of amebic origin. Abscess was drained surgically and patient got perfectly well. The blood Wassermann became negative.

Dr. John Musser (closing): Gentlemen, the hour is late. I shall say only a few words.

I am grateful to Dr. Eustis and Dr. Jamison for giving the diagnostic suggestions they have. I wish to say I appreciate the courtesy of those who so kindly entered in the discussion of this symposium.

Dr. Amedee Granger (closing): I would just like to emphasize the importance of the lateral view. I feel quite sure that there are some cases such as those Dr. Jamison spoke of when it might be quite difficult to decide whether the pathology is below or above the diaphragm. Two plates should always be made because the lateral view is extremely important. I can recall numerous instances when with a P. A. view alone the diagnosis was quite impossible and a lateral view cleared it up; and although I admit the possibility of failure, I do believe failure will be reduced to a minimum if lateral views are made. These should be made at a target-plate distance of six feet or more, with the patient sitting or standing. When the patient is lying down any fluid content flows over the entire pleural space and it can no longer be diagnosed positively.

Dr. Alton Ochsner (closing): In regard to Dr. Maes' remarks and his discussion of the technic which he has used, I believe that if it is possible to prevent secondary infection in this way that open drainage of amebic abscess is the method of choice, especially in those cases in which the abscess is located high in the liver.

In regard to Dr. Eustis' statement, I meant to imply that the pyogenic infections and not the amebic abscess were often diagnosed late by the surgeon. The criticism in this instance is due the surgeon himself as usually the patient is in the surgical service at the time this complication develops.

I grant that the type of case which Dr. Jamison described presents a real difficulty. The diagnosis in this instance is much more difficult than in the case in which the subphrenic infection develops in the hospital, the course of which can be followed.

I was pleased that both Drs. Musser and Granger failed to mention the presence of a gas bubble immediately below the diaphragm as a diagnostic point in subphrenic infections. In practically all textbooks this finding is mentioned and considerable stress is placed upon it. In reality it is seldom found and when found, it is almost invariably a late finding.

Concerning Dr. Watson's experience with emetine in the treatment of amebic abscess, I wonder if in some of his cases the patient had an amebic hepatitis and not a true abscess. From physical findings it is often difficult to distinguish between hepatitis and abscess formation. The former, however, responds well to the use of amebicides, whereas the latter does not. For this reason all cases suspected of being amebic abscess should be treated with amebicides before any surgical intervention is attempted.

SOME DIAGNOSTIC AND PROGNOSTIC BLOOD INDICATIONS.*

LEON S. LIPPINCOTT, M. D.,

VICKSBURG, MISS.

The blood, briefly, is made up of red and white corpuscles and platelets floating in a clear, straw-colored fluid, the plasma. The white corpuscles or leukocytes are cells derived from parent cells situated in certain formative organs of different types. The leukocytes, as found in the circulating blood, are of two general types—those containing granules in their cytoplasm and those without true granules.

In the normal adult, granular leukocytes are formed in the bone marrow, and according to the staining reaction of their granules by Wright's Stain, whether purple, red, or dark blue, are divided into neutrophils, eosinophils, and basophils. All when mature have rather complex lobulated nuclei and in normal blood most granular leukocytes are mature.

In normal blood, there are a few neutrophilic cells (about four per cent) without lobulation of the nuclei, although the nuclei are bent and indented. These are metamyelocytes and represent a stage in the normal development of the more complex polymorphonuclear cells. In other words, they are immature neutrophils.

In some pathological conditions, there appears in the blood a type of neutrophilic cell found normally only in the bone mar-

*Read by title before the Section on Surgery, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 16, 1929.

row. This is a mononuclear rather than a polymorphonuclear cell, the myelocyte, or fully granular precursor of the metamyelocyte and polymorphonuclear leukocyte.

In the bone marrow in health are some cells with simple round nuclei and with few granules in their cytoplasm. These are the premyelocytes, and are the precursors of the myelocytes. The premyelocytes are derived from non-granular ancestors, the myeloblasts.

In brief, the life history of a neutrophilic polymorphonuclear leukocyte begins in the bone marrow in a simple cell with round nucleus and no granules. This cell then gradually develops granules in its cytoplasm and the nucleus becomes lobulated and more and more complex until maturity in the blood stream.

The eosinophilic polymorphonuclear leukocyte and the basophilic polymorphonuclear leukocyte develop in a similar way with life histories identical with those of the neutrophil.

In normal blood the leukocytes without true granules are of two kinds, the monocytes and the lymphocytes. The monocytes or endothelial leukocytes or large mononuclear leukocytes, as they are sometimes called, have an uncertain origin about which there has been much discussion. These cells are larger than the polymorphonuclear leukocytes and the nuclei are round or indented. The nuclei are basophilic, the cytoplasm faintly basophilic. The lymphocytes originate in the lymphatic tissues scattered throughout the body. Most of them are small and show only a slight rim of protoplasm about round or slightly indented nuclei, which are usually eccentric. Larger forms occur, most frequently in children, and are now generally considered as young forms of the small lymphocytes. The lymphocytes are basophilic, the nuclei staining much more intensely than the cytoplasm.

LEUKOCYTOSIS.

An increase in leukocytes, or leukocytosis, occurs in most infections at some stage. Leukocytosis in acute cases depends almost entirely upon an increase of the neutrophilic granular cells. At the same time, there is generally a reduction in the eosinophilic cells. There are important changes also in the qualitative blood picture.

These changes are principally in the degree of maturity of the cells. The appearance of young, immature neutrophilic cells in the circulating blood—an indication of an emigration of young, immature neutrophilic cells from the marrow, is believed to indicate active infection, and the younger and the more immature the cells are; the more active the infection. This is explained by the fact that the neutrophilic cells form the main line of resistance to most infections. When an infection occurs, the marrow puts into the circulation more neutrophilic cells to combat it. There is a moderate store of mature cells at first to account for the increase found. If the infection is not at once overcome, however, the call on the marrow is greater than can be supplied with mature cells, and the marrow then puts into the blood stream cells that have not had time to reach maturity. The greater the call, the younger the cells that must be sent out to meet it.

Numerous "indices" have been proposed to bring out and apply these qualitative changes in the blood to the conditions underlying. The simplest and most practical index is that of Schilling, and from it much valuable information may be derived. Schilling divides the neutrophilic cells into groups as follows: Myelocytes; young metamyelocytes (with only the slightest indentation of the nuclei); older metamyelocytes (with deep indentation, but no true lobulation of the nuclei); and polymorphonuclears. In making the ordinary differential count, each of these types is counted separately, so that each

variety is expressed as a percentage of the total number of leukocytes. The neutrophilic cells are thus arranged in order of maturity. In our present work, we have grouped the young metamyelocytes and the older metamyelocytes together under the term, "immature forms."

Schilling, according to Piney⁽¹⁾, gives the following as normal:

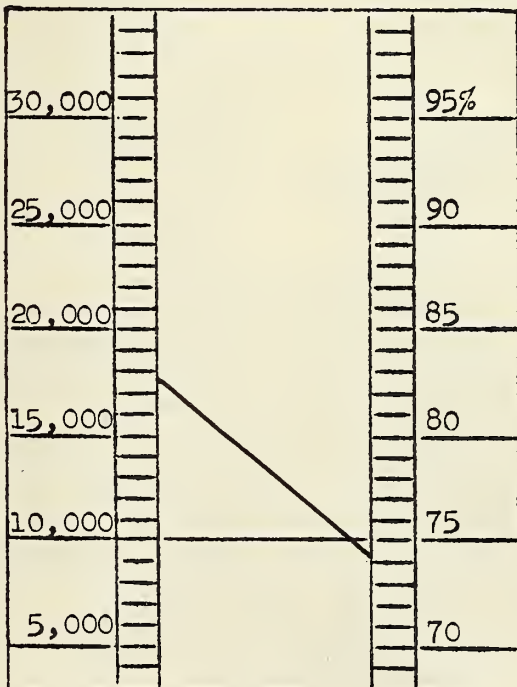
Total leukocytes	6,000 to 8,000 per cu. mm.
Lymphocytes	23 per cent
Monocytes	6 " "
Neutrophils:	
Young metamyelocytes	0 " "
Older metamyelocytes	4 " "
Polymorphonuclears	63 " "
Eosinophils	3 " "
Basophils	1 " "

In our experience in this locality 23 per cent is slightly low for the lymphocytes

and 3 per cent is rather high for the eosinophils in normal persons. Otherwise, what we consider average normal counts are very similar to the normal of Schilling.

Todd and Sanford⁽²⁾ call attention to the fact that in infectious and inflammatory conditions, a comparison of the percentage of neutrophilic cells with the total leukocyte count yields more information than either alone. They quote Sondern that the percentage of neutrophils represents the severity of the infection or the degree of toxic absorption, and the total count indicates the patient's power of resistance. In moderate infections, with good resistance, the leukocyte count and percentage of neutrophils will be increased proportionately. When the neutrophilic percentage is increased to a greater ex-

Total Leukocytes Percent. Polymorphe.



GIBSON CHART.

White, male, age 14.
Admitted Sept. 18, 1928.

Severe pain in pit of stomach began morning before admission; nausea and vomiting. Pain moved to lower abdomen and appendix region later in day.

Temp. 99° F. Pulse 83.
Abdomen rigid; tender over region of appendix.

Operation Sept. 19, showed free straw-colored fluid in peritoneum; appendix retrocecal; large gangrenous tip; fibrinous exudate.

Microscopic examination showed acute purulent inflammation.

Immature
Neutrophils
28%

Temp. 100.6° F. on Sept. 20;
normal on and after Sept. 22.

tent than is the total number of leukocytes, no matter how low the count, either very poor resistance or very severe infection is indicated.

By means of an arbitrary chart suggested by Gibson and shown in the work of Todd and Sanford, this relationship may be expressed graphically and is an aid in interpreting counts. An ascending line from left to right indicates an unfavorable prognosis in proportion as the line approaches the vertical. All fatal cases show a rising line. A descending or horizontal line suggest a favorable prognosis.

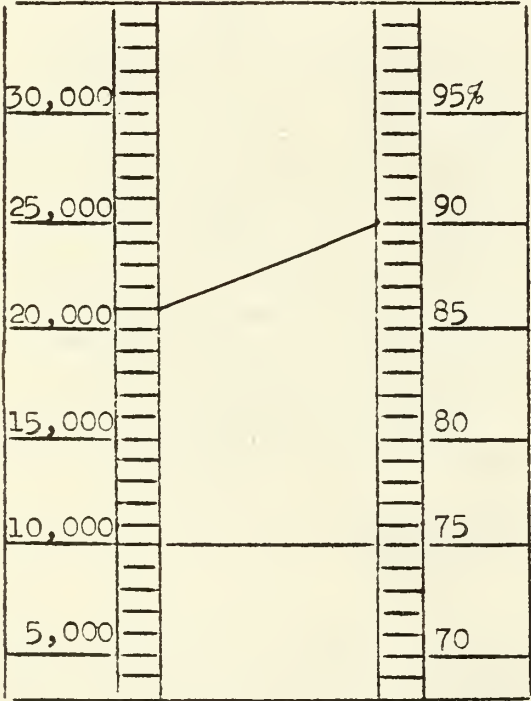
By an application of the Schilling index and the Gibson chart, the surgeon can obtain much valuable information as to indication for operation, the time of oper-

ation, and the prognosis in operative cases. The blood findings in some clinical cases encountered during the past year will serve to illustrate their value:

1. Acute appendicitis—Temperature 99°F.; pulse 83, total leukocytes, 17,600; neutrophils, 74 per cent, of which 28 are immature. A definite infection but with a descending line on the Gibson chart, indicating good resistance. Rapid recovery after operation; temperature normal in two days.
2. Acute appendicitis—Temperature 100.4°F.; pulse 75. Total leukocytes, 21,000; neutrophils 90 per cent, of which 64 are immature. More severe infection than in No. 1, and with a rising line on the Gibson chart, indicating poor resistance. Microscopic examination of appendix showed gangrene. Temperature was normal in six days.
3. Acute appendicitis—Temperature 99.8°F.; pulse 96. Total leukocytes, 14,600; neutrophils, 82 per cent, of which 40 are immature. Moder-

Total
Leukocytes

Percent.
Polymorphe.



Immature
Neutrophiles
64%

White, female, age 34.
Admitted Nov. 9, 1928.
Pain in right lower quadrant;
Temp. 100.4° F. Pulse 75.
Abdomen soft; no masses; some
tenderness over appendix.
Immediate operation showed
cecum bound down and bent on
itself so that appendix was
fixed to cecum and colon high
up under hepatic flexure.
Microscopic examination
acute inflammatory; mucosa
partially sloughed.
Temp. was 101° F. day
following operation; reached
normal sixth day postoperative.

GIBSON CHART.
ACUTE APPENDICITIS
(Case 2).

ately severe infection; rising line—resistance not good. Appendix gangrenous. Temperature normal in four days after operation.

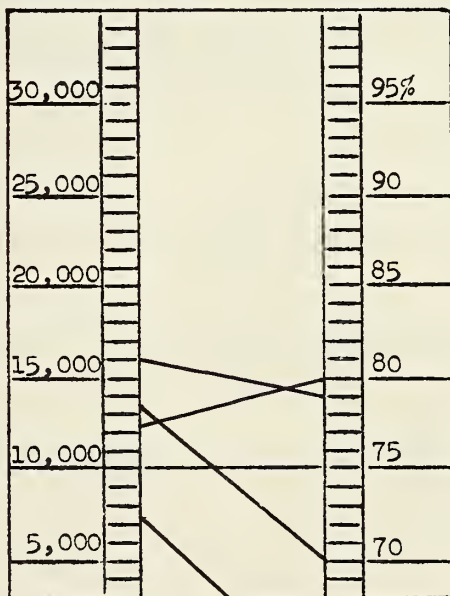
4. Acute appendicitis occurring in chronic appendicitis of many years duration. Symptoms similar to numerous previous attacks. On January 14 at 9 a.m.—leukocytes, 13,300; neutrophils, 70 per cent, of which 4 were immature, indicating a definite infection with good resistance. At 4 p.m. of the same day, however, the blood picture showed a distinct change for the worse, with leukocytes 12,200 and neutrophils, 80 per cent, with 50 immature forms, and with a rising line on the Gibson chart. The next morning the leukocytes were 16,000 and the neutrophils 79 per cent, showing infection more severe as indicated by rising total count and immature forms 56, but with better resistance than the night before. Operation was performed and temperature became normal three days later. The blood picture at this time was also much approved.

5. Acute appendicitis and acute right salpingitis occurring in a chronic condition. Leuko-

cytes were 10,700; neutrophils 75 per cent. This picture by itself with moderate fever did not give definite information, but when it was considered that 34 of the neutrophils were immature forms, infection was indicated. The next day the temperature was normal, but the leukocytes were 9,600 with 80 per cent neutrophils and 52 immature forms, a rising line on the Gibson chart, showing resistance was being lost. Temperature was normal six days after operation.

6. Chronic appendicitis, with slight acute inflammatory—Leukocytes 15,300, with 81 per cent neutrophils and 50 immature forms. Definite infection with fairly good resistance. Patient had had several previous similar attacks and recovered without operation. The next day leukocytes were 10,600; neutrophils 73 per cent; immature neutrophils 43; eosinophiles 1 per cent, indicating considerable improvement and condition better. On the day following operation, leukocytes were 12,800 with 72 per cent neutrophils and 44 immature forms, showing good resistance. Temperature was normal five days after operation.

Total Leukocytes Percent. Polymorphe.



GIBSON CHART.

56

APPENDICITIS, ACUTE
APPENDICITIS, CHRONIC
(Case 4).

White, male, age 49.

Seen Jan. 14, 1929; Adm. Jan. 15.

Began Jan. 13 with pain in right lower abdomen; soreness; some nausea; no fever; no vomiting. Bowels acted after oil but still pain. Similar attacks for 25 years.

Acute tenderness over appendix.

Operation Jan. 15.

Microscopic: Acute purulent inflammatory; mucosa partly sloughed; considerable chronic inflammatory and fibrosis.

Temp. on admission 99°F. Next day 100.5°; 2nd day 99°.

Normal thereafter.

Immature neutrophils
50%

Immature neutrophils
56%

Immature neutrophils
44%

Immature neutrophils
36%

7. Patient admitted with symptoms of acute appendicitis; temperature 99.8°F.; pulse 90. Leukocytes were 5,600 with neutrophils 52 per cent and 1 immature form. The next day leukocytes were 6,200; neutrophils, 58 per cent; 3 immature forms; eosinophils, 1 per cent. No evidence of infection and Gibson chart showed a descending line at both examinations. Operation showed cystoma of the right ovary with twisted pedicle; appendix showed slight chronic inflammatory change.

8. Acute cholecystitis—Temperature 88.4°F.; pulse 84. Leukocytes, 21,200; neutrophils 89 per cent, with 48 immature forms. Decided infection and moderately rising line. The next day leuko-

cytes were 29,900; neutrophils still 89 per cent; but with only 8 immature forms. This was a decidedly better picture in spite of the higher total count. Temperature never went over 100° following operation.

9. Acute cholecystitis; cholelithiasis—Temperature 102°F.; pulse 96. Leukocytes, 26,200; neutrophils, 89 per cent; immature forms, 55. Definite, rather severe infection; good resistance. Temperature normal five days after operation.

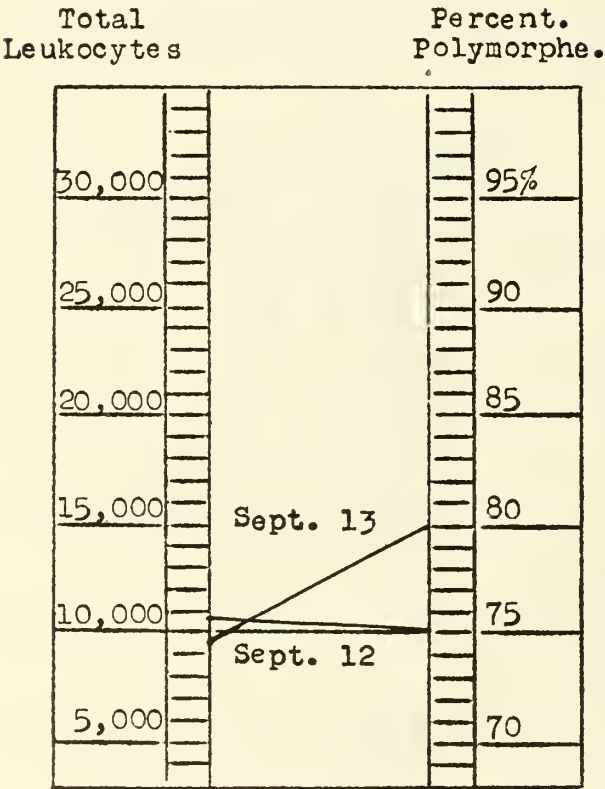
10. Impacted common duct stone; gall bladder removed 9 years before. Temperature, 100°F.; leukocytes, 12,700; neutrophils, 94 per cent; immature forms 70. Severe infection and poor re-

White, female, age 28.
Admitted Sept. 12, 1928.
Pain in right lower quadrant for one week, requiring morphine for relief.
Temp. 102° F. Right lower abdominal tenderness; tender mass in right side of pelvis.
Operation Sept. 14.
Temp. not over 100.2° F. after operation; normal after Sept. 20.
Microscopic examination showed considerable chronic inflammatory in addition to the acute condition of appendix and tube.

Immature
Neutrophiles
52%

Immature
Neutrophiles
34%

Temp. was normal on Sept. 13.



GIBSON CHART.

ACUTE APPENDICITIS
CHRONIC APPENDICITIS
SALPINGITIS, CHRONIC AND ACUTE, RIGHT
CYSTOMA OF RIGHT OVARY
(Case 5).

sistance. The next day picture was much improved, with leukocytes 19,900; neutrophils, 80 per cent; immature forms, 56. Temperature was normal two days after operation.

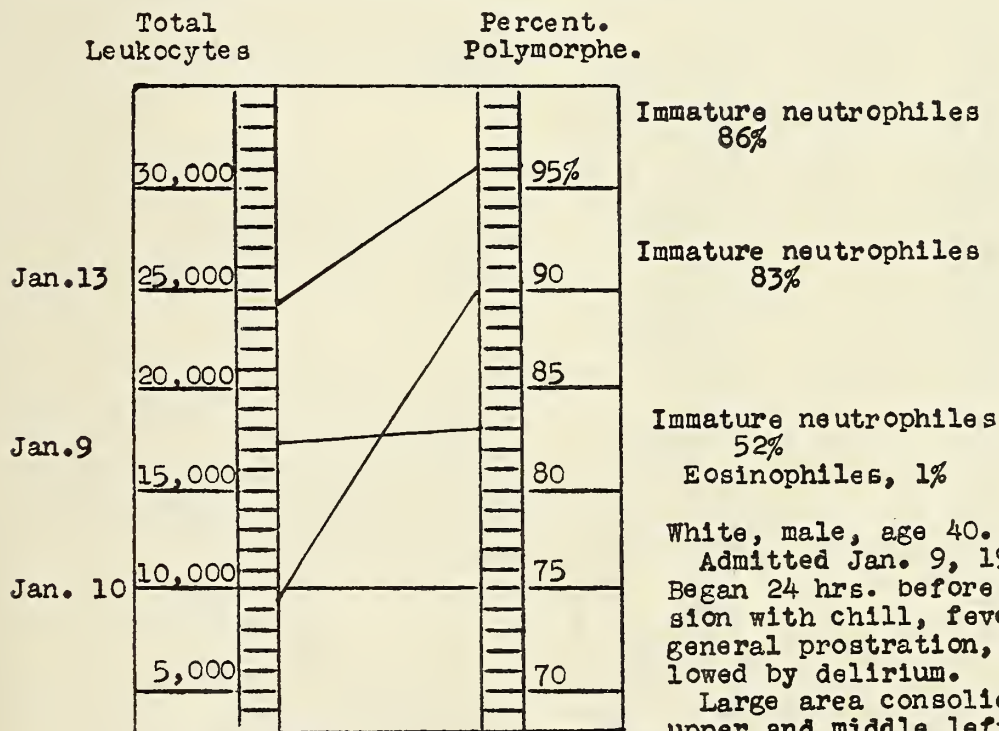
11. Acute bilateral pyelitis in a child. Irregular temperature for a month. On October 23, leukocytes were 18,000; neutrophils, 80 per cent; immature forms, 52. October 25—leukocytes, 24,300; neutrophils 84 per cent; immature forms, 64. October 26—leukocytes, 21,000; neutrophils, 79 per cent; immature forms, 46. November 4—leukocytes, 33,900; neutrophils, 84; immature forms, 50. Blood picture showed definite severe infection throughout but good resistance at all times. This case illustrates the fact that the blood usually shows a more definite reaction in pyelitis in children than in adults. Compare with next case.

12. Acute right pyelitis and cystitis in an adult female. Temperature 98° to 99°F. Leukocytes, 8,600; neutrophils, 75 per cent; immature forms, 32 per cent. The total leukocyte and neutrophil counts alone do not give any definite information in this case except that the Gibson chart shows a slightly rising line. The immature

neutrophils together with the finding of urinary infection were of value in establishing the cause of illness and its symptoms.

13. Acute pyelitis and chronic cystitis in an adult male eight weeks after prostatectomy. Illness of five days' duration with temperature of 104° F., which dropped under quinin treatment. Temperature on admission 102.6°F.; pulse 90. Leukocytes were 11,000; neutrophils, 75 per cent; immature forms, 52, indicating moderate infection and good resistance. Malaria had to be considered but the blood picture was not usual for that condition. The urine showed pus and colon bacillus infection.

14. Abscess of the lower jaw following difficult wisdom tooth extraction. Temperature 102.8°F. to 103°F.; pulse 84. August 27—leukocytes, 12,000; neutrophils, 79; immature forms, 33, indicating definite infection but rather poor resistance. August 28—leukocytes, 15,000; neutrophils, 89 per cent; immature forms, 50, a picture indicating condition definitely worse. Under treatment, temperature was normal August 31, and patient discharged.



GIBSON CHART.

BRONCHO-PNEUMONIA

(Case 22).

White, male, age 40.

Admitted Jan. 9, 1929.

Began 24 hrs. before admission with chill, fever, cough, general prostration, soon followed by delirium.

Large area consolidation upper and middle left lung.

Temp.—Jan. 9 - 99.8° F.

10 - 102.2° to 104°

13 - 99.6 to 102.6°

Thereafter - 97 to 104°, irreg.

Pulse - 100 to 150.

Respiration - 20 to 60.

Died Jan. 19.

15. Cellulitis of right arm. Temperature 102° F.; pulse 120. Leukocytes, 19,000; neutrophils, 77 per cent; immature forms, 51. Severe infection with good resistance. Irregular temperature for 10 days.

16. Mastoiditis, acute. Temperature 99°F.; pulse 120. Leukocytes 19,800; neutrophils, 81 per cent; immature neutrophils, 59. Definite pus infection; good resistance. Irregular temperature, 99 to 102°F., for 6 days following the operation.

17. Mastoiditis, acute; otitis media, acute and chronic. Temperature 99°F.; pulse, 78. Leukocytes, 13,000; neutrophils, 78 per cent; immature forms, 35. Definite infection; good resistance. Irregular temperature, 97° to 103°F., for 12 days following operation.

18. Multiple sinusitis. Temperature 99°F.; pulse 80. Leukocytes, 12,500; neutrophils, 70 per

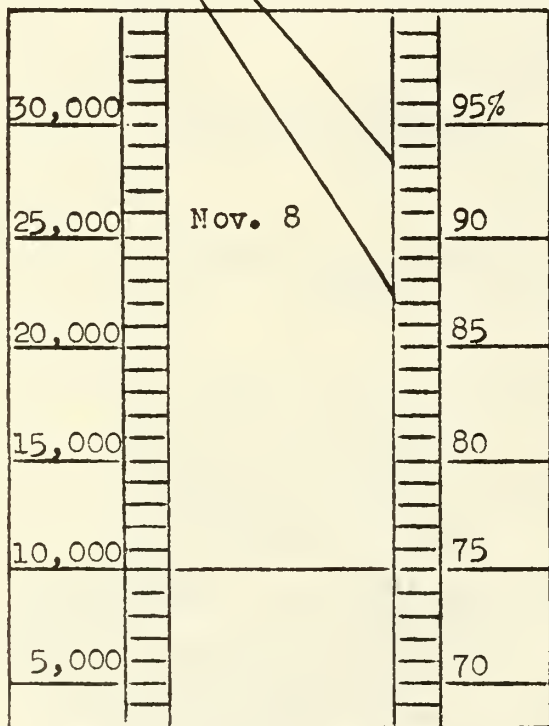
cent; immature forms, 13. Slight infection; good resistance.

19. A case diagnosed clinically as multiple sinusitis. On September 22—leukocytes, 6,500; neutrophils, 32 per cent; immature forms, 5; eosinophils, 2 per cent. On October 10—leukocytes, 6,500; neutrophils, 55 per cent; immature forms, 3; eosinophils, 3 per cent. The blood picture shows no evidence of acute infection. The rather high percentages of lymphocytes in the two counts, 50 per cent and 36 per cent respectively, may indicate some chronic inflammatory, but with normal numbers of immature forms, it is apparently very slight.

20. Multiple sinusitis. September 17—temperature 102°F.; leukocytes, 5,400; neutrophils, 56 per cent; immature forms, 39. September 18—temperature 102°F.; leukocytes, 8,600; neutrophils, 63 per cent; immature forms, 53. September 22—

40,000
37,600
Total
Leukocytes

Nov. 7. Percent.
Polymorphe.



Immature neutrophiles
69%

Immature neutrophiles
68%

White, female, age 63.

Admitted Nov. 7, 1928.

Cough and cold several days.
24 hrs. before sudden pain
in right chest; fever.

Temp. Nov. 7 - 103° F.

8 - 103

9 - 103

10 - 102

Subsequent normal.

GIBSON CHART.

BRONCHO- PNEUMONIA. (Case 23).

Dullness left lower chest
with numerous crepitant
and mucous rales; bronchial
breathing. Friction rub in
lower right chest.

Recovered.

temperature 99.8; leukocytes, 12,600; neutrophils, 60 per cent; immature forms, 38; eosinophils, 3 per cent. September 29—temperature 99.2°F; leukocytes, 11,900; neutrophils, 54 per cent; immature forms, 36. Temperature was normal on October 2. Moderately severe infection, but good resistance. A chronic condition had probably been present for some time before admission to the hospital.

21. Erysipelas. Temperature 102°F.; pulse, 110. Leukocytes, 26,000; neutrophils, 93 per cent; immature forms, 57. Recovered in five days under serum treatment. Severe infection and rather poor resistance.

22. Broncho-pneumonia. January 9—temperature 99.8°F.; leukocytes, 17,200; neutrophils, 83 per cent; immature forms, 52; eosinophils, 1 per cent. January 10—temperature 102.2° to 104°F.; leukocytes, 9,500; neutrophils, 90 per cent; immature forms, 83; January 13—temperature 99.6°F. to 102.6°F.; leukocytes, 24,200; neutrophils, 96 per cent; immature forms, 86. Severe infection with poor resistance. Died January 19.

23. Broncho-pneumonia. November 7—temperature 103°F.; leukocytes, 40,000; neutrophils, 93 per cent; immature forms, 69. November 8—temperature 103°F.; leukocytes, 37,600; neutrophils, 87 per cent; immature forms, 68. Severe infection but good resistance. Temperature was normal November 11.

SUMMARY.

A brief description of the leukocytes and their origin is given.

Leukocytosis in acute conditions depends almost entirely upon an increase in the neutrophilic granular cells. At the same time there is usually a reduction in eosinophils.

The appearance of immature neutrophilic cells in the blood stream is taken as an indication of active infection, the activity being in proportion to the number and degree of immaturity of such cells.

The Schilling index brings out the significance of the immature neutrophils.

In infectious and inflammatory conditions, a comparison of the percentage of neutrophilic cells with the total leukocyte count yields more information than either alone.

By means of the Gibson chart, the relation of severity of infection to the patient's power of resistance is shown graphically.

By the application of the Schilling index and the Gibson chart, the surgeon can obtain much valuable information as to indication for operation, time of operation, and prognosis in operative cases.

The blood findings in a number of clinical cases are shown graphically.

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THE HOME TREATMENT OF DIABETES.*

SEALE HARRIS, M. D.

BIRMINGHAM, ALA.

The many invitations that I have received during the past twenty years to address the Mississippi State Medical Association have been most gratifying to my professional pride; because in no state have I friends for whom I have greater respect and esteem, and no state association has higher standards in its scientific programs than has your great medical organization. It is particularly pleasing to be with you on this occasion because Dr. Dearman, the Chairman of your Section on Medicine, has assigned to me perhaps the most important and the most practical subject that I have ever been called upon to discuss, i. e. "The Home Treatment of Diabetes."

It is estimated that one person in every 100 of population in the United States has diabetes, and probably 95 per cent of diabetics are treated at home by general practitioners. Therefore their diets must be prepared by mothers and housekeepers,

*Read before the General Meeting, at the Sixty-second Annual Session of the Mississippi State Medical Association, Gulfport, May 16, 1929.

many of whom cannot, or will not, learn how to weigh and measure food in grams and calories. Knowing the need for simplified methods of treating diabetes it has been a pleasant task to endeavor to construct a series of diets, expressed in household terms, which approximate the nutritional needs and the carbohydrate limitations of the average case of diabetes; and it will be most gratifying if these efforts prove helpful to the general practitioner and his diabetic patients.

SIMPLIFIED DIETS.

Since the discovery of insulin, which placed the treatment of diabetes on an accurate, scientific basis, many clinicians have been working on the problem of preparing simplified diets for diabetics, who, either have not the education to learn the arithmetic of diabetes, or who would not take the time to master the simple methods of calculating food values. Some of you may recall that at the meeting of the Southern Medical Association in Washington, in November, 1923, I presented a paper, "The Use of Insulin by the General Practitioner," in which was outlined a series of simplified diets for diabetics, arranged according to weight and age. We have been gratified to learn from many physicians that they have used successfully those diets in treating their diabetics at home.

Since we have found from experience that it is practicable in beginning the treatment of the uncomplicated cases of diabetes in adults to use one diet with which to test the patient's carbohydrate tolerance. This diet may be added to, or subtracted from, until daily menus have been worked out which will provide sufficient food for the diabetic to eat to satiety, maintain his normal weight, and carry on with ease and efficiency the duties of his vocation.

Of course it is best to treat diabetes scientifically, but since that is not always possible, we have followed the rule which

was learned during ten years of general practice; i. e. that where the physician cannot do what is best for his patient, then do the next best thing, and above all things, apply common sense in the management of disease. If the diabetic has to be treated at home, even if he is intelligent enough to learn food values, in beginning his treatment it is usually best not to confuse him by discussing grams and calories but prescribe a diet selected largely from food that is prepared for the rest of the family.

It is important in the very beginning of treatment to impress upon the patient that it is not difficult to prepare the food for a diabetic, nor it is a hardship to live on such a diet; because he can have plenty to eat of a variety of foods, and if he will adhere to his diet diabetes will not shorten his life or interfere with his usefulness or happiness. The fact is that the careful diabetic will live longer than other members of his family who have not been taught to live on a low carbohydrate, well balanced diet.

Some of the most brilliant results that we have seen in the treatment of diabetes have been among very poor patients who could scarcely read, or write, but who possessed what many educated people lack, i. e. common sense, and the will to do right. They were placed on diets, containing given quantities of simple foods expressed in household terms, which they carried out in their homes. They were not confused with trying to work with the metric system, and they were not given the fancy, patented diabetic foods that are expensive and often misleading in their carbohydrate content. They were taught simple and practical methods of how to live at home and have diabetes.

COOPERATION OF PATIENT NECESSARY

If the diabetic is among the 30 or 40 per cent who will have to use insulin he should be taught that it is even more necessary for him to adhere to his diet

than if he had a mild case of diabetes. Above all things the diabetic should be made to realize the seriousness of his disease, and impressed with the fact that if he is not willing to follow the diet prescribed by his physician, and remain under his care, even after he has learned the arithmetic and chemistry of diabetes, he surely will suffer the consequences of his dietetics sins. The paths of the careless, self-satisfied and self-indulgent diabetics who sometimes think they know more than their physicians, like the paths of glory, "lead but to the grave."

In order to secure the full cooperation of the diabetic while keeping him under observation until his optimal diet can be worked out, it is necessary to explain to him that the only method of finding out the amount of food he can take and keep his urine sugar free is by trying out a test diet, increasing or decreasing the food, and using insulin if necessary, until the diet suited to his particular nutritional needs has been determined.

TRIAL DIET.

If the adult diabetic has no diacetic acid in his urine, if he can take solid food, and if there are no complications he is given the following trial diet, which may be increased or decreased until a diet is worked out on which he may live comfortably and keep his urine sugar free.

Breakfast: 1 raw fruit; $\frac{1}{2}$ small grapefruit; $\frac{1}{2}$ small orange; or medium size peach; or $\frac{1}{4}$ small cantaloupe. 8 tablespoonful cream. 1 egg, cooked any way except fried, 1 pat butter on egg while hot. 3 slices bacon (crisp). 1 diabetic bran biscuit and 1 pat butter.

Dinner: 1 cup broth, bouillon, clear or strained vegetable soup. 1 Uneeda biscuit (cracker). Medium serving of lean meat, $\frac{1}{2} \times 3 \times 4$ inches (trim off fat); steak or roast beef; or ham, or roast pork; or fish; or $\frac{1}{2}$ small, or $\frac{1}{4}$ large chicken; or 1 quail; or $\frac{1}{4}$ rabbit or $\frac{1}{4}$ squirrel. Three rounded tablespoonfuls cooked vegetables; turnip

greens; or collard greens; or string beans; or asparagus; or okra; or cauliflower; or cabbage; or spinach; or 2 tablespoonfuls squash or beets; or carrots; or onions; or turnip roots. 1 pat butter on vegetables while hot. 1 diabetic bran biscuit.* 1 pat butter. Dessert: $\frac{1}{2}$ baked apple; or 1 peach (sliced), or 2 tablespoonful strawberries, or blackberries, with 4 tablespoonful cream (cream may be whipped). No sugar. No canned fruits or dried fruits.

Supper: 1 cup soup, strained, as for dinner. 1 Uneeda biscuit (cracker). American or Swiss cheese ($\frac{1}{2} \times 2 \times 3$ in.) or 4 tablespoonful home-made cottage cheese; or meat as for dinner. 4 tablespoonful raw vegetable; celery, lettuce, cold slaw, or 1 large, or 2 small tomatoes; or 1 tablespoonful Waldorf salad. Diabetic mayonnaise.** 1 Diabetic bran biscuit.* 2 pats butter. Egg and cream custard.*** Dessert: $\frac{1}{2}$ small orange; or $\frac{1}{2}$ small grapefruit; or 1 small or $\frac{1}{2}$ large peach; or $\frac{1}{4}$ small cantaloupe; or small piece (about the size of a small orange) of heart of watermelon.

First Raise in Diet. The diabetic is kept on the trial diet for 3 days and if his urine becomes sugar free he is given a raise in

**Recipe for Bran Biscuits.* Use regular feed bran. Put 6 or 8 cups in sack and let water run through it, or stirring bran until water is clear. This usually requires an hour or more. Let this dry, keeping it on hand for biscuits. Pillsbury bran may be used without washing. Mix 2 cups washed brand, or Pillsbury bran, with one tablespoonful mineral oil. Put one tablespoonful of agar-agar in 1 cup of water, heat to boiling point. Mix bran and dry ingredients with agar in water—make biscuits about 1 inch thick. Grease muffin tins with mineral oil—cook in moderately hot oven about 40 minutes.

***Recipe for Diabetic Mayonnaise* 1 egg yolk, 1 tablespoon lemon juice, $\frac{1}{2}$ cup mineral oil. Place egg yolk and oil on ice. Beat yolk and add oil drop by drop, stirring constantly. This makes 5 servings of dressing.

****Recipe for Eggs and Cream Custard.* 1 egg and 3 or 4 tablespoonful cream. Beat eggs thoroughly, add cream and mix well. Pour in container and bake in a slow oven.

the above diet as follows: Add to breakfast two teaspoonful oatmeal; two ounces (4 tablespoonsful) cream. Add to dinner three tablespoonsful cooked green vegetables. Add to supper one tablespoonful raw vegetables and 1 pat butter.

Second Raise in Diet. If the diabetic continues sugar free for 3 more days on the trial diet plus the first raise, he is given the second raise as follows: Add to breakfast two tablespoonsful oatmeal, after cooking. Add to dinner 2 oz. (4 tablespoonsful) cream, and 1 pat butter.

Third Raise. If the patient's urine continues sugar free after the two raises plus the trial diet he is given a third raise of 1 or 2 extra slices of bacon for breakfast; and an increase in the quantity of cooked green vegetables for dinner by 1 or 2 tablespoonsful. Likewise the amount of meat, fish or fowl may be increased by one-fourth or one-half for dinner or supper.

If the patient's urine remains sugar free on the trial diet plus two or three raises he will be getting about the optimal diet for the average adult, and he is then kept on that diet indefinitely, until there are indications for increasing, or decreasing his food.

Weighing Food in Grams. The trial diet and the raises when measured in tablespoons and ounces allow a considerable percentage of error, but since most of the foods used in these diets belong to the 3 per cent, 5 per cent and 10 per cent vegetables and fruits unless the error is very large it will make little difference in the total carbohydrate content of the three daily meals. It should be understood by the physician and his diabetic patient that the household measurements are not to be compared in accuracy with weighing and measuring food in grams; and the trial diet with quantities prescribed in tablespoonsful is not to be used except for a few days, with the patients who can learn the metric system. The trial diets and the raises were prepared for use by diabetics who cannot buy

the gram scales, or who have not sufficient education to learn to weigh and measure their food in grams. We have found it practicable to teach even the most unlearned diabetics to weigh their food in grams, with diets that have been worked out for them. The effort to teach food values to many diabetics only confuses them. In such cases nothing is said to them about carbohydrates, proteins and fats, and the word calorie is never mentioned to them. They are persuaded to spend 10 dollars for a Chatillon, or Hanson gram scales, on which with movable dial, they soon learn to weigh their food. The trial diet with raises worked out in grams is given them; and with very little instruction they learn to weigh out their three daily meals. Indeed it often is best to show the intelligent diabetic how to weigh his food in grams before the effort is made to teach him the metric system, and the carbohydrate, protein and fat percentages, and caloric values of various foods. The following trial diet worked out in grams is useful in such cases:

Breakfast: 1 raw fruit: 150 gms. ($\frac{1}{2}$ small) grapefruit; 75 gms. ($\frac{1}{2}$ small) orange; 75 gms. peach (without seed); 75 gms. Cantaloupe or muskmelon (edible portion). 60 grams (4 tablespoonsful or 2 ounces) cream. 1 egg. 15 gms. bacon. 1 diabetic bran biscuit. 20 gms. butter ($\frac{1}{2}$ on egg).

Dinner: Soup; clear broth, bouillon or strained vegetable soup. 1 Uneda biscuit (cracker). Meat: 50 grams lean beef; or steak; or ham; or chicken; or fish; or game. Vegetables: 100 grams (after cooking) turnip greens or collard greens; or spinach or cabbage; or asparagus; or okra; or 50 grams squash; or beets; or string beans; or carrots; or onions; or turnips. 1 diabetic brain biscuit. 20 grams butter ($\frac{1}{2}$ on vegetables while hot). Dessert: 50 grams baked apple; or 75 grams peach; or 50 grams pear; or 75 grams strawberries; or 75 grams blackberries; or 75 grams dewberries; or 50 grams raspberries; no sugar.

No dried fruits or canned fruits or canned berries. 60 grams cream.

Supper: Soup: 1 cup, strained as for dinner. 1 Uneeda biscuit (cracker). Meat Substitute: 40 grams American or Swiss cheese; or 50 grams cottage cheese; or 60 grams English (green) peas; or 60 grams lima or "butter" beans; or, if meat is preferred, 50 grams as for dinner. Raw vegetable: 30 grams lettuce; or 60 grams cold slaw; or 60 grams tomato; or 75 grams celery; or 40 grams Waldorf salad. Diabetic mayonnaise. If raw vegetables not available may use cooked vegetables as for dinner. 1 diabetic brain biscuit. 20 grams butter. Dessert: Diabetic egg and cream custard; or 150 grams ($\frac{1}{2}$ small) grapefruit; or 75 grams orange; or 75 grams peach; or 75 grams cantaloupe; or 75-100 grams watermelon (edible portion).

First Raise in Grams. If the diabetic's urine is sugar free after one, two or three days, on the trial diet weighed in grams, the first raise is made as follows: Add to breakfast 40 grams of oatmeal (after cooking). For dinner add 50 grams of green vegetables, making 150 grams of vegetables.

Second Raise in Grams. If the diabetic's urine remains sugar free or becomes so in one, two or three days on the trial diet plus the first raise, make the second raise consisting of 40 grams more of cooked oatmeal, making 80 grams of oatmeal for breakfast. Also add 60 grams cream, making 120 grams (4 ounces), for breakfast. 60 grams cream and 10 grams butter may be added to dinner.

Third Raise. If the diabetic's urine is sugar free, in one, two, or three days after the first two raises 10 grams (2 slices) of bacon are added to breakfast making 25 grams bacon for breakfast; and 50 grams more of green vegetables are added to dinner or supper. Likewise the amount of meat, fish or fowl may be increased by 25-50 grams.

Examining the Urine at Home. One of the first lessons that the diabetic should

learn, whether he is treated at home or in a hospital, is to examine his own urine for sugar and diacetic acid. One or two test tubes, a few ounces of Benedict's solution, a small bottle of ferric chloride, and a medicine dropper will not cost the patient over a dollar, and that is all he needs to keep informed as to whether or not he is eating too much glucose forming food and also as to whether or not he is metabolizing his fats.

To test the urine for sugar add 8 drops of urine to a teaspoonful and a half of Benedict's solution in a test tube, shake and place it in a cup of boiling water on the kitchen stove, and let it simmer for five minutes. If a heavy greenish precipitate forms it means a trace of sugar, if a yellowish sediment is found a moderate amount of sugar is present, and if the precipitate is red it shows that the urine is heavy with sugar.

For several weeks after beginning the treatment the patient or some member of his family should examine two or three specimens a day until he learns the diet he can follow and keep his urine sugar free; and he should examine his urine frequently as long as he lives. If the diabetic is tempted to eat sweets; or too much bread or other starchy foods; or if he eats too much meat, 58 per cent of which is metabolized as glucose, and then when he examines his urine and finds it loaded with sugar, he will not be so apt to repeat his indiscretion in eating.

The test for diacetic acid is just as simple. To about 2 teaspoonsful of fresh urine add 6 or 8 drops of liquor ferri chloridi, U.S.P. If the urine turns reddish a small amount of diacetic acid is present; but if it turns a deep Burgundy red, it shows a tendency to acidosis, an indication for the diabetic to reduce his fats or cut them out altogether, until there is no diacetic acid in his urine. It is better, however, to teach the diabetic to send for, or report to, his doctor when he finds the heavy red

color on adding the iron to his urine. The diabetic should know that if he takes aspirin the ferric chloride test for diacetic acid will be positive.

When and How to Use Insulin. If after three days on the trial diet there is still sugar in the diabetic's urine, he is given from 3 to 5 units of insulin 20 minutes before eating two or three times a day; and if in 24 hours his urine still contains sugar he is given from 6 to 10 units of insulin three times a day. If in another 24 hours the sugar has not disappeared from the urine, 15 units are given three times a day. In the severe cases 20, or even 25 or more units may have to be given three times a day before the patient's urine becomes sugar free, but in the majority of cases 5 or 10 units two or three times a day will be sufficient. When the patient's urine becomes sugar free on this diet from the use of insulin, if necessary to gain weight or to maintain bodily strength and vigor the diet is raised as above outlined and if the sugar returns in the urine insulin dosage is increased until the urine is free from sugar. Then the second raise may be made, and if the sugar reappears in the urine the insulin is increased by 3 to 5 units before each meal, each day until his urine becomes sugar free.

The third and fourth raises may be made in the same way, increasing the insulin slowly until the urine is sugar free. After the patient's maintenance diet and his insulin dosage have been worked out as above described, he is kept on it, with the same dose of insulin for several weeks, the effort being to keep the urine sugar free, without insulin reactions. If the insulin reaction occurs, the insulin is reduced or the food increased.

Discontinuing the Insulin. In many cases of diabetes after a few weeks rest to the pancreas by dieting and by the use of in-

sulin, the patient's carbohydrate tolerance is increased. In such cases the insulin dose is gradually decreased and if the sugar does not reappear in the urine the insulin may be discontinued permanently. When the insulin is discontinued the patient should be made to realize that he should never over eat, that a food debauch may break his carbohydrate tolerance and he will then have to use insulin again.

Insulin is not habit forming, but it should not be left off suddenly without at the same time reducing the diet in proportion to the amount of insulin used. The patient taking insulin should keep on hand an adequate supply, but if he cannot get insulin he should reduce his food by one-half, or even two-thirds, and leave off the fats altogether, because the principal danger from leaving off insulin suddenly is acidosis, or even coma. It is not leaving off the insulin that is harmful, but continuing the extra food that he could metabolize by using it.

The patient using insulin should be made to understand that if for any reason his food is cut down his insulin dose should be reduced in proportion. If he fasts a day he must use no insulin without explicit directions from his physician; and if diarrhea develops the dose of insulin should be reduced because food may pass through the intestines without digestion and the diabetic with diarrhea may have a low blood sugar, which, with the addition of insulin, may produce an insulin reaction. A number of clinicians have reported hypoglycemic reactions from the use of even small doses of insulin with diabetics who have diarrhea.

For the above statement of facts the idea that once a person begins the use of insulin it is dangerous or harmful to leave it off is proved to be erroneous. It is true that the severe diabetic may have to continue insulin for the rest of his life, but without insulin

he could not live long. With insulin and the proper diet there is no reason for diabetes to interfere with the health, or efficiency of the most severe case of diabetes. Insulin is therefore a great boon to diabetics and thousands are living today who would have been dead without it.

While insulin has saved many lives it is a distressing fact that the diabetic death rate has increased since Banting's great discovery. This perhaps is due to the fact that many diabetics have received the impression that they can eat what they want, provided they use insulin; and no doubt insulin is being used injudiciously by inexperienced physicians. The management of the uncomplicated case of diabetes at home is comparatively simple; but it must be admitted that in dealing with diabetic children and with the complications of diabetes, such as acidosis, gangrene, the infections, and eye manifestations, a larger proportion will be saved if treated in hospitals under the care of clinicians who have had ample experience with the disease.

DISCUSSION.

Dr. Charles LeBarron (Gulfport): I was unfortunate in missing the first part of Dr. Harris' paper which I regret very much. I am glad to see the concise and even way in which Dr. Harris has presented a diet which may be used in the home.

We find, however, with all the various charts we have—carbohydrates, proteins, fats and calories—we have great difficulty in getting our patients to carry out this proper diet. We have three cases of people with whom we have to deal. First, we have the ignorant class of people upon whom it is absolutely impossible to impress the necessity of carrying out their diet and weighing their food and examining their urine regularly.

We have a second class of people, intelligent people, who are willing and active in their co-operation. In these we get the very best results.

We have a third class of people who seem to think they know more than the physician or dietitian, and as a result we have a woeful failure in these cases. When they find they are feeling pretty well and when their urine is practically sugar free, they feel as though they can get off their diet and do as they see fit.

Another great trouble I find with my patients is that they believe that insulin is a specific. They think if they take insulin they can eat what they want, drink what they want, and do what they want. I want to register a protest now against this idea which is prevalent among the people generally that insulin is an absolute specific for the treatment of this disease. I have had cases which have been obliged to continue the use of insulin for years and years and will probably continue it until the end of their days.

There is very little difficulty in following this diet because we have so many charts that we can give to the patients, and with ordinary intelligence they can figure out their diet without any difficulty.

I have enjoyed Dr. Harris' paper very much.

Dr. Joe E. Green (Richton): I want to thank Dr. Harris for bringing us this practical discussion. If there is anything I believe in, it is horse sense in everything and getting away from things that are technical and getting down to the common-sense things that we can use every day.

Dr. Harris has certainly brought us that this morning, very scientific but still simple as an old shoe which has seven holes in it. This is the sort of thing we want to carry back home. It will be helpful to us doctors. I feel sure that we are all mighty glad that Dr. Harris had a chance to present the paper, even though he got here late.

Dr. Seale Harris (closing): I have nothing to add in closing the discussion, except to say that Dr. Dearman is responsible for the title of this paper on the home treatment of diabetes. We have simplified the treatment so that the patient can carry it to his home. I feel very happy in being able to present this paper, and I want to thank you for your kind consideration and attention.

THE SIGNIFICANCE AND THE LIMITATIONS OF THE RADIOGRAM IN THE DIAGNOSIS OF ORAL SEPSIS.*

SIDNEY L. TIBLIER, D. D. S.,

NEW ORLEANS.

I deeply appreciate the honor and privilege to address you. As an associate member I have been very much interested in your deliberations for they have some bearing on my chosen field just as I believe the subject I have chosen to speak on has a bearing on all phases of medical science.

The subject of oral sepsis is a wide one and it is impossible in the time allotted to go into all phases of it.

As a dentist I feel that my remarks should be limited to the pathology of the teeth, and their supporting and investing structures.

I believe I can say without fear of contradiction that the radiogram can be used to the greatest advantage in tooth and jaw work for in this region we have structures which are all definitely radiopaque and in varying degrees; making it possible to determine many pathological changes not so easily demonstrated in soft tissues.

The tooth alone by virtue of its three distinct calcified tissues, histologically different, show up differently in the radiogram, so that deviations from normal can easily be demonstrated.

For instance, destruction of enamel by decay, building up of secondary dentin, resorption or hypercementosis of the cementum. And then, when we consider the nature of the surrounding cancellous and compact bone which shows up in clear contrast to the teeth it is possible to note very easily bony changes in the direction of rarefaction or condensation or complete destruction as in necrosis.

These considerations form then the basis of the significance of the oral radiogram.

Sadly, however, we are confronted with the fact that because so many things of diagnostic value can be told even from a poor radiogram that many of the finer details for a complete diagnosis are lost.

For instance, the incipency of peridental disease as shown by a break in the lamina dura surrounding the tooth.

Or again, the pathology at the end of a root may be expressed in terms of slight resorption or roughening and this is lost sight of in the poor radiogram, and we could go on enumerating a great number of examples.

Now with all the significant features of the radiogram, even a poor one, let us consider the limitations and the means we have at our disposal to make complete diagnosis, by making up for these deficiencies in the radiogram.

First, the radiogram gives us little information regarding the etiological factors of the evident pathology found in the film. These factors are either systemic or local and must be learned in order to make a complete diagnosis.

Secondly, the radiogram shows the teeth in their mesiodistal relationship and tells us nothing of pathology which might exist labially or buccally and lingually of the teeth.

Third, the radiogram does not show an incipient gingivitis for no bone changes have as yet occurred. The case might be on the road to an extensive pyorrhea which might be prevented by determining the etiological factors concerned in the gingivitis and eliminating them.

Fourth, the radiogram alone is not always conclusive about the relationship of infected teeth to the maxillary sinus.

*Read before the Orleans Parish Medical Society, June 24, 1929.

Fifth, the radiogram tells us nothing of the bacterial nature of the infection. We guess very often but that is not scientific.

Sixth, it is impossible to tell merely from the radiogram whether an area of bone destruction or loss represents infection without the history and clinical examination at hand. We will show that in a slide.

Seventh, can we definitely say that any area is acting as a focus or not from the radiogram? I think not. However I am of the opinion that when found they should be removed and not wait for a heart lesion, or kidney lesion, etc. to develop. Better prevent than attempt cures and I would underscore the word attempt for very often no seeming good results from the removal of foci for the damage is done. Removal of foci are always productive of good, but the good is oftentimes only expressed by an inhibition of further damage and an increase in resistance.

We could go on with innumerable other limitations of the oral radiogram but they will be brought out in considering the slides.

I would make the plea that the radiogram be taken at its face value and the positive assertion that it should be supplemented by the following procedures at least if a fairly complete and an accurate mouth diagnosis is desired.

History, dietary habits, mouth mirror and explorer examination, blunt probe examination of the gingival crevices of all teeth for pockets, transillumination of all teeth and gums and of the sinuses, vitality test of all teeth and relative vitality as compared to normal; study models of the case to determine the local etiological factors often expressed by malocclusion and trauma and lack of function, differential diagnosis especially in tumor formations.

These procedures should be routine for all cases and is the part that the dentist is responsible for.

The blood examination, urinalysis, serological tests and differential diagnosis of those conditions often occurring in the mouth which are manifestations of systemic disease, the physician is responsible for.

As physicians you are vitally interested in eliminating foci of infection and since these foci are some times obscure it behooves you to have thorough diagnoses made.

Many teeth have been uselessly sacrificed but I believe many infected teeth with obscure pathology have been allowed to remain because of slip shod methods of diagnosis or a total dependence on the radiogram for diagnosis.

A full mouth roentgen-ray examination together with the procedures outlined above is routine in my practice even for patients in good health and I think is the foundation of good sound preventive dentistry, health dentistry and should be practiced by all dentists, and I feel that when I discover and eliminate an area of infection which is liable at any time to begin its slow insidious work of affecting other vital organs perhaps to the point of irreparable damage, I have done something worth while.

DISCUSSION.

Dr. Lucien A. Fortier (New Orleans): I enjoyed Dr. Tiblier's paper very much indeed and think he has thoroughly covered the subject.

From the title, I feared he estimated roentgen-rays as being of little worth in diagnosing periodontal infections, but after seeing his films and hearing his demonstrations, I feel much relieved to learn that they are of value.

We, who do general radiographic work, realize that the dentist has to see the case; has to make a thorough examination; and must co-operate with us in order to do the most good to the patient. In the treatment of medical cases, the real sick patient requires that every possible focus of infection be removed, i. e.: in heart disease, rheumatic conditions, or any other condition in which a focus of infection might be the cause of the disease. Prophylaxis is a step forward in cases where there is definite evidence of periodontal infection. I believe foci of infection ought to be removed.

I wish to again state that I enjoyed the doctor's paper very much.

Dr. Homer Dupuy (New Orleans): Dr. Tiblier's first contribution before this society is worthy of high commendation. The radiograms, unusually clear in outlines, with his comments are very instructive. They prove his contention, that too much dependence is not to be accorded the roentgen-ray in dental pathology. I am convinced that this attitude applies to the whole skull. Rightly does he say that the history and clinical examination must be carefully considered before reaching a conclusion. A roentgenogram when taken by a good technician is of great help, but, it is never infallible or final. Relative to the maxillary sinus, or antrum, I know he is right. Radiograms do show, in certain subjects, teeth roots projecting into the antral floor. But, it requires clinical proof to accuse a tooth as an offending factor. On the other hand we have instances in which teeth with obscure pathology are allowed to remain in antral floor, when they are causing damage to the sinus. And this resulted for lack of clinical examination when too much reliance was placed on the inconclusive evidence of radiograms. And then we have the all-important question, is the antrum playing the role of a reservoir for pus accumulations from the upper sinuses? I have proven that teeth projecting into the antrum may thus become infected secondarily. Roentgen-ray will only give us the half truth in such conditions. Nothing but the most refined clinical examinations will clear up such a problem.

Dr. W. A. Lurie (New Orleans): We must compliment Dr. Tiblier on his presentation of so comprehensive a paper on so broad a subject, and in so short a time. I agree with much of what he has said of the fallacies in the taking and in the reading of the dental roentgenogram. It has been my practice to classify the shadows as seen in these pictures into three grades, identified as grades I, II and III depending upon the density of the tissue or body producing the shadow. By such division of shadow class one may better understand the type of condition one is dealing with, and the direct relation it bears to some tissue type. Relative to the seriousness of focal infection there is no discussion. Some of the so-called failures of relief, however which are recorded after the removal of the oral focus of infection are due as the doctor intimates, to the development of an active secondary focus, un-recognized or untreated, and very often to incomplete removal of the original focus, as is often noted in the dental radiogram.

Dr. Tiblier's paper is on a vital subject and I believe we should devote more time to discussions of this character.

Dr. Sidney L. Tiblier (closing): I certainly appreciate the kind way in which the discussions went along about the subject that I chose and am glad that those who discussed it were practically in accord with what I had to say.

However, to emphasize one point I brought out in this work about health dentistry, I want to add this: that if every dentist would follow what I term as routine in the handling of these cases, many of these severe infections could be prevented. We are getting away from the old-time dentistry of waiting for cavities to become large before filling them and of telling a patient with a history of tooth trouble to wait for further developments and to report back in a month or two. There is no telling what will happen in the interim. The pulp may become involved and even the bony structures beyond affected. Some teeth go to wreck in a very short time. By routine examination, using the radiogram for its real value in determining pathology, we can prevent a lot of trouble. Trace the condition down to the etiological factor. How can a positive diagnosis be made unless the dentist knows something of the cause? You do not find physicians treating diphtheria, for example, without getting cultures and smears made. Some men will not give antitoxin until their diagnosis is confirmed by laboratory study. Why? Because they insist on knowing the causative agent. A good many dental conditions show up in the roentgenogram, and in some instances by not knowing the etiological factor and waiting for further developments a tooth is lost and the only treatment left is extraction. A natural tooth is better than any restoration, yet I agree with Dr. Fortier that a tooth that is a source of infection should be removed. In cases of suspicious teeth in cases of systemic disease the co-operation of the medical man, the roentgenologist and the dentist will insure a correct diagnosis and good work.

I am certainly very pleased and feel honored to have addressed you tonight.

Thank you.

NOTE: This paper was supplemented by lantern slides.

SPINAL ANALGESIA IN ABDOMINAL SURGERY.*

ANDRE B. CARNEY, M. D.,

CLARKSDALE, MISS.

During recent years the question of anesthesia has played a major role in all surgical discussion, and during the past year it has become unusual to look through any one of the current surgical magazines without some reference being made to spinal anaesthesia.

The older custom of a general anaesthetic to most patients is to a certain extent in different sections of the country being somewhat displaced by the more technical, though very satisfactory, spinal analgesia. This procedure, while now apparently coming into its own, has enjoyed previous spasmodic eras of popularity since 1885, though due to a former definite and distinct misunderstanding of the exact physiological and chemical reaction in the spinal cord the procedure was employed with a certain degree of fear and trepidation, even by those most familiar with its effects. Notwithstanding the cautiousness employed, certain occasional unfortunate results have reacted to its present disadvantage. Due to recent works by Labat, Koster, and Kassman (*Surgery, Gynecology and Obstetrics*, November, 1929) and others, we know the exact nature of the reaction occurring and can use certain definite procedures to prevent the untold results.

A brief historical review advises us that spinal anaesthesia was first suggested by Corning in 1885; but it is to Bier that credit must be given for endowing surgery with the method. In 1898 Bier started with cocaine as an anaesthetic agent, and obtained complete anaesthesia of the lower half of the body, although in one patient the analgesia extended as high as the scalp; but the after effects, chiefly giddiness, severe headache, vomiting, and syncope, were most dis-

turbing. Being under the impression that these symptoms were due to loss of cerebrospinal fluid Bier kept his patients in bed for a long time. This did not help to relieve the condition so he dropped the method as being too dangerous, and decided to await the discovery of a less toxic drug. The method was, however, continued by Tuffier in France, despite the considerable opposition and notwithstanding the fact that it had been practically given up in Germany.

In 1891 Giesel isolated tropacocain from the leaves of the Java Coca plant. The alkaloid was synthetically prepared by Liebermann in 1892, and has since enjoyed great favor in Germany. Its toxicity is half that of cocaine. It was only in 1904, when Fourneau discovered stovain, that spinal anaesthesia was again brought before the profession. Novocain was introduced the same year by Einhorn. It was found much less toxic than any of the anaesthetic agents known at the time. Its combination with adrenalin gave it a high practical value in the method of local anaesthesia, for which it is still considered as the ideal anaesthetic agent; but when injected with the dura it was said to be less active than the other drugs. After a few trials with novocain, the pioneers of spinal anaesthesia went back to stovain. Some surgeons used tropococain; the minority reinjected cocaine in the weaker doses of purer solutions. The ill-effects of the drugs employed and the occasional fatalities due to the method form the subject matter of many reports. In the meanwhile careful experiments were made with novocain on the human being, and the clinical observations actually tend to show that novocain must be preferred to the other anaesthetic agents for the induction of spinal anaesthesia.

It is not the author's intention to discuss the reasons why novocainization is safer than the other methods of spinal anaesthesia, nor to dwell upon the merits of any individual technic. When dealing with a method which, for so many years, has met

*Read before Clarksdale and Six Counties Medical Society, November, 1929

with considerable opposition, especially on the part of those who had little or no experience of its principles, one should be cautioned against trying too many procedures and experimenting with various drugs. Fatalities are mostly due to lack of experience; their occurrence is always detrimental to the method. Let those surgeons who are familiar with one method stick to it, if they consider that the advantages derived from it are the best; but those who are anxious to use spinal anaesthesia for the first time, or desirous of improving the technic they are actually using, will find in the following pages a handful of information gathered from personal experience.

In recent years, however, reasonably safe solutions of intra-spinal preparations have been placed on the market. These preparations in the hands of the average surgeon, exercising average care and precaution, can be, and are used as safely and efficiently as the several forms of general anaesthesia.

The preparation with which the majority of us are most familiar, I am sure, is that marketed under the name of spinocain. This preparation is put in sealed glass ampules ready for immediate use. By being so prepared the old danger of contamination is lessened. The preparation is marketed in two strengths though the weaker solution of approximately gr. IV of novocain to an ampule is the one most generally used.

Spinocain has a lighter specific gravity than spinal fluid which is an important factor in the form of anaesthesia and a factor which must be considered beforehand if unfortunate results are to be avoided.

This factor, as I shall show later is one of the most important points in securing a good spinal anaesthesia, or as it should correctly be called spinal analgesia.

The technic of spinal analgesia is relatively simple.

The patient is placed on the operating table in the prone position. He is then re-

quested to turn on his side, the left side, if right surgery is to be performed, and the right side if left surgery is the case. There is no choice if a mid-line incision is to be made. The knees and hips are acutely flexed or as nearly so as possible. The shoulders and hips are in the vertical if ease of puncture is to be established. On examination of the spinal column wide interspaces are noted between the bodies of all vertebrae below the level of the lower thoracic. The site of choice for ease of puncture and good analgesia for all areas below the level of the umbilicus is the space between the fourth and fifth lumbar vertebrae, however, if surgery of the upper abdomen is being done a higher interspace is preferable though not essential.

The technic of introducing the anaesthetic with the patient in the position described above is done with the same care as in preparing for the operation. The area of skin is painted with the desired strength of iodine, usually 3 per cent, though the ordinary full strength tincture is satisfactory. Sterile towels are applied to the surrounding adjacent parts in order to minimize the danger of introducing infection. With the gloved finger an indentation is made at the selected site of puncture. Into the skin and deeper tissues of this area is injected 1 cc of solution of novocain containing m 3 of adrenalin hydrochloride. This prevents puncture pain in the skin while the adrenalin aids in maintaining normal blood pressure following injection of the intra-spinal solution. The needle for the spinal puncture should be one with more or less blunt beveled edge. This is of decided advantage in not going through the canal as is frequently the case with the long-pointed, sharp needles. The needle is grasped by the syringe end and the shaft, not near the point, as this is unnecessary, and is only inviting infection. As the canal is punctured there is a peculiar feel that comes only with experience and similar to the feel occasioned by sticking a pin through a tightly drawn piece of rub-

ber. The stylet is slowly and carefully withdrawn, care being taken not to disturb the position of the needle.

The syringe loaded with the anaesthetic agent, and in such position that it can be picked up without the operator moving materially, is now attached to the needle. A small amount of spinal fluid is withdrawn to make sure that the needle is still in place. The anaesthetic is now very slowly injected and withdrawn. This procedure is repeated several times to insure complete diffusion of solution in the spinal fluid, and unless this is done the results will be very disappointing. The amount of diffusion necessary depends to a great extent on the site of the operation. If the work to be done is of the vaginal plastic or rectal work either once or twice will be sufficient.

If the procedure is for a hernia or appendix then three to four diffusions are necessary to insure good analgesia. For work on the gall bladder or stomach it is best to puncture the canal between the last thoracic and first lumbar and complete the analgesia with three of four diffusions. This hastens the effects as well as allows the operator a little more surgical time, however, a successful result for this area can be completed with puncture between fourth and fifth lumbar vertebrae, though the anaesthetic agent must be thoroughly diffused and patient held in horizontal or five degrees Trendelenburg for at least ten minutes.

After the solution is completely diffused in the canal the patient is turned flat on his back and the head of table is dropped to the desired degree of Trendelenburg. It is unsafe to operate with less than 5 degrees and safety factor is directly proportionate to the degree of Trendelenburg. Since this solution is lighter than spinal fluid the experience of the surgeon determines to a great extent the degree of Trendelenburg

desired and the higher the operative fluid the less Trendelenburg in degrees can one satisfactorily employ. To attempt a high operation in a deep Trendelenburg position would necessitate a decrease in the time factor if good analgesia were to be maintained throughout.

The above agent properly administered is surgical for approximately one hour depending to some extent on the individual and the degree of toxicity present.

Following the administering of this form of solution the patient should at no time be allowed, within three hours, to become horizontal or sit up. After removal from the operating table, the patient is placed on the bed, the foot of which has previously been elevated to the desired degrees and allowed to remain in this position during the intervening length of time.

The danger in this form of analgesia is primarily in the fall of blood pressure resulting in cerebral anemia and not in the respiratory or cardiac paralysis as was once believed. Should the patient show signs of embarrassment the Trendelenburg position should be increased immediately and be maintained until the patient feels entirely comfortable. After this, if it is advisable to do so, the degree of Trendelenburg is very slowly decreased. Adrenalin $m \times$ may or may not be given, as the operator sees fit.

This form of analgesia is very desirable in many toxic cases where a prolonged general anaesthetic would be detrimental. The surgical shock in all cases is apparently greatly minimized thereby lessening in our toxic cases the necessary high mortality. As a general rule in all cases with blood pressure not less than 100, all other factors being equal I believe it affords the surgeon at present the safest and most reliable form of anaesthetic agent.

BACILLARY DYSENTERY IN
LOUISIANA.

DANIEL N. SILVERMAN, M. D.,

NEW ORLEANS.

Attention is called to the occurrence of bacillary dysentery in this state and city, not because the writer has anything new to offer in the way of diagnosis or treatment, but as a reminder of the outcropping of acute cases in sporadic instances. Some of these cases are allowed to go undiagnosed and untreated until a state of chronic dysentery is developed. Others do not appear for supervision until several weeks to months have elapsed since the acute attack. Fortunately, according to some authors, there is a tendency for the acute cases to heal spontaneously while a few merge into a chronic condition. In a previous communication in the Medical Clinics of North America the writer reported a small series of cases of chronic bacillary dysentery, calling attention to the frequency of the disease, the fact that many are treated with one form or another of anti-amebic medication without cure. While amebiasis is sometimes associated, the coexistence of the two diseases is sometimes accountable for our failure to obtain complete cures of individuals who have had amebic dysentery and very adequate treatments for same.

In the Touro Infirmary for a period of ten years (1919 to 1929), there were a total of 25 cases of both acute and chronic bacillary dysentery. Out of this number, 8 were in babies and children between the ages of 3½ months and 4½ years. The children's cases were acute in 7 and chronic in 1. Three of them died within a few days of the onset, a mortality of 37½ per cent. Of the 17 cases in adults, 7 were acute and 10 chronic. There were no deaths. The geographical distribution of the twenty-five cases show the majority originating in New Orleans, namely, 15. The other cases were about equally distributed in north,

southwest and south Louisiana with the exception of the two that came from Mississippi.

The present paper will deal principally with a discussion of cases in the acute form. With reference to the diagnosis, it is occasionally necessary to depend on the clinical findings for a very early diagnosis. The agglutination test may appear later and the bacilli are not infrequently missed. In each of my cases the agglutination test was strongly positive in a few days after the onset of symptoms. Whitmore states that the agglutination reaction is not of much value before the tenth day of the disease. On the other hand, some authorities have found agglutinins in the sera of patients as early as the third or fourth day of the disease, and some have found the agglutinins in the sera of half of their patients before the tenth day of the disease.

CASE REPORTS.

1. J. W. W., aged 53 years, a salesman, while traveling in North Louisiana, became suddenly ill with abdominal pain and bloody diarrhea on July 3, 1925. He was seen by me one week later. The examination showed a temperature of 103 3/5 degrees, pulse 115. The blood count showed a total white of 9,150 with 90 per cent neutrophils. The bloody stools presented numerous pus cells but no ameba. The proctoscopic examination revealed an extensively ulcerated rectum and sigmoid with negative smears from the ulcers. The cultures were negative for dysentery bacilli. The blood agglutination was positive against *B. dysenteriae* of Flexner. The temperature subsided within four days of rest in bed and fluids only. The patient insisted on leaving the hospital. The bowel mucosa continued to present numerous ulcerations.

2. A colleague awakened during the night in August, 1927, with rather severe abdominal cramps, an intense diarrhea of blood and mucus. The temperature rose to 102° and for about ten days varied from 99.5° to 102°. A slight leukocytosis of about twelve thousand was present at the outset. Within three days the blood area was positive for agglutinins against *B. Shiga*, in dilution of 1-60. The sigmoid was very much injected and ulcerated. On absolute rest in bed, a liquid diet, the disease subsided in two weeks and there have been no symptoms of dysentery since.

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3. Dr. B., an interne in one of the local hospitals and a resident of New York, had been sick for one week with frequent stools and general weakness. His abdomen was generally tender, especially over the cecum. The stools, numbering 8 to 10 daily, were bloody and mucoid containing much pus but no ameba or other protozoa. The temperature went no higher than 101°. The leukocyte count was 12,000 with 82 per cent neutrophils. The rectal and sigmoid mucosa was extensively ulcerated. One day after admission the agglutination test was weakly positive for *B. dysenteriae* of Flexner. The very next day, eight days after the onset, the test was strongly positive (complete agglutination at 1-60. No bacilli dysentery were found in the stools.

SUMMARY.

The above cases serve to emphasize the occurrence of sporadic cases of acute bacillary dysentery in Louisiana. Most of these cases are due to the Flexner bacillus and the mortality in adults is practically nil.

DISCUSSION.

Dr. Charles W. Duval (New Orleans): It is a pleasure to discuss the paper of Dr. Silverman on bacillary dysentery, particularly because of my interest and close contact with the subject for so many years. There are a number of interesting things about bacillary dysentery which unfortunately Dr. Silverman did not touch upon, and I can only allude to since the time allowed me is limited. Prominent among these which I might mention are etiology transmission, character and location of the lesion, complications, cure and prevention.

I have often thought that here in New Orleans we frequently overlook bacillary dysentery infection, due perhaps to the fact that we are too prone in this particular clime to regard dysentery in the adult as always amebic. We should not forget that bacillary dysentery is not only common but often associated with amebic infection. I have seen quite a number of bacillary infections associated with amebic colitis. These cases do not satisfactorily clear up after the treatment for amebic dysentery because of the bacillary infection which persists as a chronic form of the malady. Since amebiasis not infrequently is complicated with a Shiga infection the recognition that a mixed infection exists is important from the standpoint of treatment. In these mixed infections the bacillary dysentery may persist long after the cure of the amebiasis. I believe the physician would do well to determine in all cases of amebic colitis whether or not there is bacillary invasion as well, which is

done by testing the blood for specific agglutinins, in other words performing the agglutination reaction test against members of *B. dysenteriae*.

It is important to bear in mind that bacillary dysentery is caused by several variants of the dysentery bacillus species, and the two more common strains are known as "Shiga" and "Flexner" respectively. The Shiga type of organism is responsible for the epidemic form of the disease while the Flexner strain is rarely found in the epidemics and is the cause of sporadic cases of acute dysentery. Furthermore the "Shiga" type produces a soluble toxin while the "Flexner" is endotoxic in character. The recognition of this difference in the nature of the toxin is important in connection with serum-therapy. There is an effective antitoxin on the market for the cure of the "Shiga" infection and no immune serum of value for the "Flexner" type of the disease.

Dr. Silverman spoke of the agglutination reaction as of value in diagnosis. I would like to add that it has the same diagnostic value as the Widal in typhoid or paratyphoid fever. The specific agglutinin occurs quite early in the blood of patients suffering with acute bacillary dysentery and may be detected on the third or fourth day of the disease.

There is another form of treatment for bacillary dysentery which according to some is more efficacious than antidysenteric serum. I allude to the bacteriophage of D'Herelle. This author claims that in four to eight hours after the administration by mouth of the dysentery "phage" there is a marked subsidence of the symptoms; the bloody mucus stools which have been eight to ten a day drop off to two and three, and the case is on the way to convalescence within twenty-four hours. While D'Herelle considers the "phage" treatment of bacillary dysentery specific. Davison and others have not gotten the same results. Perhaps they did not give it a fair trial. Certainly the "phage" treatment is to be tried and I would commend it to Dr. Silverman and others interested in bacillary dysentery.

Dr. E. C. Faust (New Orleans): An early differential laboratory diagnosis between amebic and bacillary dysentery is extremely important. In amebic colitis the finding of the active motile *Endameba histolytica*, with or without ingested red blood cells, in the freshly passed stool, or the precystic or cystic stage of this endameba, constitutes a specific diagnosis. However, it is frequently true that the specimen is cold, in which case the vegetative amebae would have disintegrated. A macroscopic examination on the part of an experienced internist or laboratory worker

usually makes an immediate diagnosis possible and allows of treatment 24 hours or more before culture methods yield results. The cellular exudate in bacillary dysentery consists of a preponderance of pus cells with little or no feces, while that of amebic dysentery contains a larger amount of red cells and copious fecal material. It is particularly important to have this information where bacillary dysentery is suspected in order that the toxic symptoms may be relieved. It must be remembered, however, that in a certain percentage of cases bacillary infection is superimposed on amebic colitis, in which case attention should first be directly to reducing the former, leaving the latter for subsequent treatment.

INTESTINAL DIVERTICULOSIS.*

J. HOLMES SMITH, JR., M. D.,

NEW ORLEANS

Diverticula, occurring in the intestinal wall, have been recognized for many years, but until rather recently, with the exception of Meckel's diverticulum, they have been of more interest to the anatomist and to the pathologist, than to the clinician.

Diverticula are pouches in the intestinal wall, covered by one or all of the coats of the intestine and connected, directly, with the intestinal lumen.

Depending, mainly, upon their covering, diverticula are classed as either congenital (true) or acquired (false). Congenital diverticula possess all of the coats of the normal intestinal wall. Of this variety, Meckel's diverticulum is the best and practically the only example. Other than Meckel's diverticulum, congenital diverticula are so rare as to be almost negligible.

The present paper is devoted to a brief consideration of the so-called, acquired or false diverticula, with a presentation of several cases. These diverticula differ from the congenital type, in that they do not ordinarily possess a muscular coat. Nothnagel defines them as "herniform protrusions of the mucosa through the muscular coats; at the same time the serous lin-

ing is pushed out by these hernias so as to cover the diverticulum." This does not seem to be an invariable rule, as at times diverticula, apparently acquired, are found possessing all of the coats of the intestinal wall.

As to causation, many theories have been advanced, all of which would seem to play a part yet none of them entirely so. All seem agreed that advancing age, constipation and weakened intestinal walls predispose to diverticula. Especially would this seem to be so with the colon. While this may be largely true, it does not answer for those cases occurring in young subjects. One of the cases reported below was but twenty-two years of age.

Congenital defects undoubtedly play a part both in the small intestine and in the colon. Another factor, apparently of great importance in those portions of the intestine which have a long mesentery and permitting of great mobility, is traction. This naturally would concern the jejunum, ileum and transverse and sigmoid colon.

It is not unlikely, also, that ulcers in the intestinal wall may predispose to the formation of diverticula by producing what may be termed a point of least resistance. This would seem to hold particularly true for diverticula occurring in the duodenum.

While formerly little attention was paid to this type of diverticulum, the reason was, no doubt, to be found in the fact that their diagnosis can only be made, definitely, by radiologic, surgical or post mortem examination. There is no symptom or train of symptoms characteristic of this condition. Routine radiologic examination of the gastro-intestinal tract has resulted in the finding of numerous unsuspected diverticula, many of which, however, have no clinical significance and are merely coincidental findings. Diverticula may occur in any portion of the intestinal tract from the pylorus to the rectum. The most common location is in the large intestine, but diverticula are not infrequently found in the

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small intestine. The most common location in the small intestine seems to be the duodenum.

Case⁽²⁾ reports 6,847 complete barium meal studies, followed by supplementary barium enemas, with the following results: "Evidence of duodenal diverticulosis in 85 cases. Evidence of jejunal diverticulosis in 4 cases. Evidence of diverticulosis in both jejunum and ileum 1 case. Colonic diverticulosis in 138 cases."

Because of their greater frequency, colonic diverticula are probably the more important, clinically, but Case says of duodenal diverticula: "Usually considered as without clinical significance, it is shown that they are often associated with ulcer of the duodenum or disease of the gall bladder or pancreas and when the seat of diverticulosis they may, themselves, constitute a serious menace to the patient."

While the greater number of diverticula, in both large and small intestine, apparently exist without producing any clinical evidence of their existence, trouble is caused by a sufficient number of them to make the subject an important one.

Diverticula may occur singly or in large numbers. In the duodenum, they are most often single, while in the remainder of the small intestine and in the colon, they are generally multiple. Sometimes large numbers of diverticula are present. In one specimen in the pathologic department of the New Orleans Charity Hospital, which I was permitted to examine through the courtesy of Dr. Hauser, seventeen diverticula were counted in the jejunum and ileum and ranging in size from that of a pea to that of a hen's egg. Specimens are on record where forty or more diverticula have been found.

Diverticula may be located on any part of the intestinal surface, but, that part of the intestinal wall where the mesentery is attached and the blood vessels, etc., enter and leave the gut wall, is considered, by

many, a point of least resistance. It is along this border that probably the great majority of diverticula are to be found. Formerly, it was thought that this was what might be termed a point of least resistance and a natural site for diverticula. Chlumsky⁽³⁾, quoted by Beer, seems to have disproven this theory. "When he injected normal small intestines that were still alive, not removed from the normal animal, the rupture occurred opposite the mesentery, whereas, as soon as he worked with intestines removed from the animal, dead some hours or more, they ruptured into the mesentery."

There are no symptoms or signs indicative of a diverticulum. The symptoms are dependent upon the portion of the bowel involved and such local changes as may have occurred. They may range from slight, indefinite abdominal symptoms to those of acute intestinal obstruction. There may be no clinical evidence of their existence or the patient may present the picture of intestinal carcinoma. In the case of duodenal diverticula, one may be very much puzzled to differentiate the condition, as the symptoms may suggest ulcer, gall bladder disease or some vague upper abdominal condition. At times, there may occur inflammatory changes (diverticulitis), adhesions and matting of coils of intestine together with a resultant obstruction. Gordinier and Sampson⁽⁴⁾ have reported such a condition incident to diverticula in the small intestine. Diverticula occurring in the sigmoid seem particularly liable to inflammatory changes due to stasis of fecal matter in their lumen and this may lead to a train of symptoms strongly suggestive of malignancy.

The pathologic possibilities of diverticula are well summed up by Beer⁽⁵⁾: Diverticula which produce stenosis of the sigmoid or upper rectum.

Diverticula which lead to perforation into the peritoneum.

Diverticula that lead to abscess or localized peritonitis in the left iliac fossa.

Diverticula leading to perforation into the urinary bladder of densely adherent to the bladder.

Diverticula and mesenteritis.

Diverticula and appendicitis.

Diverticula and carcinoma.

As already mentioned, there are no symptoms or signs indicative of diverticula, therefore the diagnosis cannot be made from the history or physical examination. In the living subject, a diagnosis is dependent upon a good radiologic examination or upon the surgeon. The fact that this condition may present itself in the guise of such a variety of other conditions is good evidence of the need for a radiologic examination of the gastro-intestinal tract in all conditions (abdominal) which do not readily respond to treatment.

Examination of the duodenum should be by plate and by fluoroscopy. Many times fluoroscopy is necessary to properly demonstrate a duodenal diverticulum. It is my experience, that the ordinary barium meal is the most satisfactory for demonstrating colonic diverticula, the barium remaining in the diverticular pouch after the remainder of the intestine is clear.

As for treatment, it is mainly symptomatic and will depend largely upon existing conditions and any emergencies which may present themselves. In the case of colonic diverticula, however, there is one rule which should always be observed and that is to keep the feces always liquid by the use of mineral oil. By doing this we go a long way toward preventing stagnation of fecal matter in the diverticulum with the resultant inflammatory changes, possible obstruction, etc.

REPORT OF CASES.

Case 1: Miss O. F., aged 20 years, a native of Honduras, was first seen in my office January 21, 1926. At this time she complained of epigastric pain (occurring about three hours after partaking food and relieved by food and soda.) The history was very suggestive of duodenal ulcer. Routine examination of the stool showed numerous hook-worm ova present (*necator Americana*) and it was decided, first, to treat the parasitic condition, hoping it would prove to be the source of her trouble. She was given 4 c.c. of carbon tetrachloride and five or six subsequent stool examinations failed to show any more ova present.

Following the administration of the carbon tetrachloride, the patient's condition improved markedly and she seemed completely relieved. Six weeks later she returned, complaining of the same train of symptoms present at the time of her first visit—pain, three hours after eating and relieved by food and soda.

Feeling that the patient very likely had a duodenal ulcer, she was given a radiologic examination. By both fluoroscopic and plate examination a small diverticulum was found in the first portion of the duodenum. The filling and emptying of the diverticulum was very beautifully shown by fluoroscopic study. As to the etiology, in this case, it is possible that the diverticulum may have developed at the site of a duodenal ulcer. She was placed on a modified ulcer diet and was greatly relieved of her symptoms.

Case 2: Miss E. C., white, aged 22 years, admitted to clinic at Charity Hospital Aug. 2, 1926. The complaint was stomach trouble, duration about six months. There was shortness of breath, frequent belching, "gas on stomach," poor appetite and loss in weight. Examination revealed a pulmonary tuberculosis which no doubt accounted for her complaint. During the course of the examination, radiographic examination of the colon was made to determine whether or not there might be evidence of intestinal tuberculosis. The most positive finding in the colon was a number of very beautifully demonstrated diverticula, situated in the sigmoid. These diverticula were apparently causing no trouble and were merely incidental findings.

Case 3: Mrs. F. S. M., white, aged 65 years, first seen at her home March 14, 1926. Complaint, at this time, was pain in the left lower abdominal quadrant of about three days duration, but at this time seemed to be getting better. There was a history of constipation during the attack and examination showed rather marked tenderness in the region of the sigmoid with the suspicion of a mass being present. The patient gave

a history of similar attacks occurring at intervals of six to eight to ten months and extending over a period of about ten years. Constipation was generally pronounced during an attack but during the intervals she generally felt quite well.

Here was a lady, decidedly in the cancer bearing age, with pain and a possible mass in the left lower quadrant of the abdomen and complaining of constipation. There were two favorable things in her case: she had had many similar attacks over a period of years and when first seen she had begun to improve. She was kept in bed, diet restricted to liquids and mineral oil freely administered, enemata were also given. Within about a week, she was able to be out of bed and the pain in the abdomen had nearly disappeared. When able to leave the house, she was taken to the Hospital and radiographic examination made of the colon. This showed large numbers of small diverticula involving a large portion of the colon, but decidedly more numerous in the region of the sigmoid. What probably happened in her case was a gradual collection of fecal matter in the diverticular pouches with a resultant inflammation, and constipation.

The treatment, in such a case largely consists of one thing, mineral oil. Such patients should keep their stools constantly in a semi-liquid state by the use of petrolatum and thereby prevent stasis and other troubles resulting from it.

At times, patients are encountered, in whom such a condition is present, but in a more advanced condition and a diagnosis of malignancy might readily be made.

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DISCUSSION

Dr. Alton Oschsner (New Orleans): Dr. Smith has just covered the medical aspect of diverticulitis. There are several points which I

should like to stress from a surgical standpoint. Although it is true that every case of diverticulitis may be prevented if the proper conservative therapy is instituted early enough, many patients are seen with advanced processes which are in reality complications of the original diverticulum. Of the complications, the most important to the surgeon is peridiverticulitis, especially with abscess formation. Localized abscess formation occurs more frequently than does a generalized infection of the peritoneum because of the preceding peridiverticulitis. These abscesses, unless recognized early and properly treated, are especially prone to rupture into an abdominal viscus, the bladder being the common viscus that is most frequently involved. Bryan found that in a series of 42 vesicocolic fistulae the rupture of a peridiverticular abscess was the most frequent cause of fistulae. The surgical treatment of such a case consists of early recognition and prompt evacuation and drainage of the abscess. Another important complication is carcinoma. Mayo found that in 42 cases in which a resection had been performed a carcinoma coexisted in 31 per cent. Clinically, it is often impossible to distinguish between the two lessons, but this is of relatively little importance because of the high incidence of carcinoma in diverticulitis, which necessitates extirpation of the diseased portion of the bowel in all cases in which the diagnosis is not correct.

Dr. L. J. Menville (New Orleans): The radiologist is frequently called upon for help in the diagnosis of diverticulitis and both the meal and barium methods should be used. I cannot agree with Dr. Smith in accepting the meal method alone in the radiological diagnosis of this condition. The haustral segmentations of the colon will often contain remnants of the meal when the colon is nearly or completely empty, using the meal method, and these haustral markings are often mistaken for diverticula.

Dr. Smith is to be complimented in presenting such an interesting and well prepared paper.

Dr. E. D. Fenner (New Orleans): This paper is so interesting that I cannot resist the temptation of adding, as a matter of clinical experience, a synopsis of two cases of intestinal diverticula in the form of Meckel's diverticulum, that came under my observation and care.

The first case dates back a good many years. A boy of seven or eight years was brought into the hospital presenting symptoms of partial intestinal obstruction and also what looked like symptoms of severe appendicitis. I operated on him and, to my great surprise, found that what I was dealing with was a Meckel's diverticulum whose tip was attached to the abdominal wall over which a loop of bowel was partly strangulated. Ligation and resection of the Meckel's diverticulum was followed by recovery of the patient.

The second is a more recent case. About four years ago a negro boy, two and a half years of age, was sent down here with a fecal fistula discharging from the umbilicus. A good deal of pus, and, every now and then, fecal matter would escape from this umbilical opening. He gave a history of infection that formed a tumor. The doctor who treated him in the country found a small abscess, made an incision and evacuated the pus. The child recovered, but was left with a fistula. I cut down around the fistulous opening through the skin, prolonging the incision at either end and had comparatively little difficulty in getting down to the intestine. At the base of a Meckel's diverticulum fecal matter was escaping. This case, I am happy to say, also recovered.

Dr. D. N. Silverman (New Orleans): Duodenal diverticula, like all other types of diverticula, are interesting. Sometimes we see cases that have undergone one or more operations and notwithstanding that the gall-bladder and appendix has been removed, these patients return to use with symptoms of upper abdominal pain. These symptoms, many of us believe, are caused by duodenal diverticula, and since the subject has been called to our attention, more than ever before, we have had occasion to see, on re-examination of roentgen-ray plates taken several years before, the presence of duodenal diverticula.

Diverticula of the colon is not always associated with constipation and the necessity of giving your patient mineral oil; quite often the opposite is the case and diarrhea is the result of the inflammatory process. Apparently those who most frequently have trouble with diverticulitis of the colon are the older individuals where there is an associated carcinomatous condition.

POST-PARTAL CARE.*

WALTER EDMOND LEVY, M. D.,†

NEW ORLEANS

Aleck Bourne makes the statement that ante-natal care is the most important single line of forward movement of thought in obstetrics in the last ten years. While, with this statement, perhaps every obstetrician is in accord, I must say that, as a rule, far too little thought and attention is given to post-partial treatment. Unless some very definite complication arises, the casual accoucheur is only too likely to let the after-care of the parturient take care of itself. While to the majority of you, I shall not bring out any very new facts, I shall attempt to outline a rational post-partial line of therapy which we have standardized on the Obstetrical Division of Touro Infirmary, and which we believe has greatly simplified matters and has given us excellent results.

Now, the first point to consider is that at the termination of the third stage of labor, viz., the birth of the placenta, the woman is, strictly speaking, in the post-partial period, and our chief concern at this movement is the prevention or control of post-partial hemorrhage. Mismanagement of the third stage of labor is one of the greatest causes of post-partial hemorrhage for the too early employment of the Crede method will cause the expression of the placenta before the uterus is ready to contract and retract. Now, if this occurs, or even if the case is handled correctly, it is our desire to control all post-partial bleeding, and to reduce it to a minimum. The technique employed at present is as follows: Immediately upon the termination of the third stage, one c. c. of pituitrin and one c. c. of gynergen (ergotomin tartrate) are given by needle. Twelve hours later, one tablet of gynergen is given. Until recently, we had been using one drachm of

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fluid extract of ergot, every four hours for six doses. Now when one stops to consider that ergot contains three alkaloids, viz., ergotoxin, histamine and tyramine, and that ergotoxin, or ergotomine is the specific alkaloid, it can readily be seen that it is highly desirable to give the specific drug.

It is very definitely stated by Dale and Dixon, that tyramine has a pressor action similar to, but weaker than adrenalin. Furthermore, Rucker has shown that adrena'in will relax a tonically contracted uterus. Bourne and Burn, experimenting with tyramine, state that it is practically without therapeutic action. As regards histamine, they state that its only effect was to increase the frequency of the contractions already present, for a short time. The effect of ergotomin can best be summed up by again quoting Bourne and Burns, who state: "An injection of 1.0 mgm. ergotomin tartrate produces a powerful contraction of the uterus that lasts for at least 16 hours; and hence is an ideal agent for use after delivery."

To recapitulate, it is highly desirable to keep the uterus in a state of tonic contraction for twenty-four hours after delivery, and we believe that this is best accomplished by the method outlined above. Occasionally, one hears much loose talk concerning the use of ergot, or its derivatives, as a cause of afterpains. To our way of thinking this is false reasoning, as afterpains are caused by the effort of the uterus to expel something, most likely a blood clot, and one can readily see that if the uterus is kept tonically contracted, such a clot cannot form and the incidence of afterpains is greatly reduced. However, if they do occur, we find that aspirin gr. V, and codein gr. $\frac{1}{2}$, are almost specific. Lately, we have been trying lumalgin, and at present are highly pleased with it and intend to substitute it for codein.

DIET.

It is our custom to give all cases full diet within twenty-four hours after delivery. The exceptions to this rule are, of course, complete tears of the perineum which are immediately repaired, and the toxic cases. We can see no valid reason why a woman who has had a baby, should not be able to eat after the effects of the anesthetic have passed. In addition to this, she is given milk to drink between meals. Furthermore, it is my particular custom, as I do the low cervical cesarian section, and as a result see very little, if any digestive disturbances, such as nausea and vomiting, and dilatation of the stomach, to give these cases soft diet on the second day.

CARE OF THE BOWELS.

In none of our cases do we follow the ancient and honorable custom of giving castor oil the day following delivery, as we believe nothing in particular is to be gained from its use. We employ a daily enema of oil and glycerine, or saline, and about the fifth or sixth day, give a mild laxative in the form of cascara or milk of magnesia, if such is indicated.

CARE OF THE BLADDER.

An empty bladder is conducive to a comfortable and satisfactory puerperium. Not only is a full bladder a source of discomfort to the patient, but due to its size and weight, will push an uterus into retro-position and also prevent proper contraction. We have two standing orders on our division, firstly, that all patients must be catheterized every 8 hours if unable to void. Secondly, the amount voided each time must be recorded on the nurse's record. This last point is of great importance for a patient may void very frequently, but small amounts, and as a result have a full bladder.

CARE OF THE BREASTS.

In a previous communication, before this Society, on Breast Abscess, I gave in much detail the care of the breast in the puerperium. Suffice it to say here,

however, that the breast must be properly supported so as to obtain free drainage of the milk from the lacteals. For this purpose, we use the adhesive straps as suggested by Jellinghaus, in place of the cumbersome breast binder. Care should also be taken of the nipples so as to prevent cracks and fissures. They should at all times be covered and protected with a clean dressing. Before each nursing they should be carefully cleansed with boric acid solution, followed by sterile water. After each nursing, the nipples should be washed with 70 per cent alcohol and then sterile water, and the clean dressings reapplied. If the nipples are sore, I prefer the use of an ointment of 5 per cent resorcin in lanolin.

CARE OF THE VULVA AND PERINEUM.

After each bowel movement or emptying the bladder, the perineum and labia should be well irrigated, dried, and a fresh vulva pad applied. This particular phase in the after-care is of the utmost importance when suturing has been done.

It is our custom after delivery to allow the patients to move about freely in bed. No matter if the case be one of complete laceration, are legs tied together, as was formerly the custom, nor at any time is a case compelled to lie flat upon her back. Free moving and turning about is rather to be encouraged from two standpoints. Firstly, inactivity favors a retardation of the venous circulation, and this in turn, particularly, if associated with a severe post-partial hemorrhage, is one of the predisposing causes of thrombophlebitis. Secondly, if the patient is compelled to lie flat upon her back, the large boggy uterus, with its relaxed ligaments, easily tends to go into a position of retroversion, and if not corrected, can be a great source of future trouble. To obviate this, it is our plan to require that each and every patient, from the second day after delivery, lie for at least one hour in the morning, and one hour in the evening, flat upon her abdomen. As a result of this simple

little procedure, we have cut down our incidence of post-partial retroversion enormously, and we do not find it necessary to require the patients to assume the terribly uncomfortable knee-chest position.

Patients are allowed to have the back-rest after the third day, but if possible, primipara are kept in bed for a full two weeks, and multipara, for some ten to twelve days.

POST-PARTAL EXAMINATION.

Some five to six weeks after delivery, all patients are examined. Notes are made as to the condition of the vagina, the size, consistency, and position of the uterus, and the condition of the adnexa. If the uterus is retroverted, now is the time to correct it, before it becomes permanent; for this purpose, a Hodge pessary is used. No post-partial examination is complete without a visual examination of the cervix. If the cervix is eroded, everted, or lacerated, it is our custom to do a radial cauterization. This can very easily be done right in the office, or clinic without any anesthetic, local or general, care of course being taken not to touch the vaginal walls. It is my firm conviction that as a result of this cauterization, many such symptoms as leucorrhea, and the dull dragging pain in the lower abdomen (due no doubt to a para-metrial cellulitis from absorption from the chronically infected cervix), will be cured. Furthermore, as a result of the wiping out of this chronic source of irritation in the cervix, it is fair to predict that in years to come the cases so treated will show a tremendous diminution in the incidence of cervical carcinoma.

Before dismissing the subject of the post-partial examination, I should like to call to your attention one very definite symptom of which the patients very often complain, viz., backache. And to add that this is all too often blamed upon retroversion of the uterus. As a matter of fact, we find it due to, most often, one of two causes—a cellulitis in the parametrium, due to absorption

from an endocervicitis, or to a sub-luxation of the sacro-iliac syncondrosis. The treatment of the former condition has been touched upon, whereas the treatment of the latter, after confirmation, by means of the roentgen-ray, is a properly fitted sacro-iliac belt.

In closing, I should again like to emphasize the fact that post-partial care is of the utmost importance in the proper handling of an obstetric case, and is just as much of a prophylactic measure as antepartal care, and as such, should be stressed in our teachings to medical students.

CASE REPORTS AND CLINICAL SUGGESTIONS

VOICE WITHOUT A LARYNX.*

HOMER DUPUY, M. D.,

NEW ORLEANS.

This patient which I present, a white male, aged 42 years, had carcinoma of the larynx. I did a laryngectomy in April, 1929, at Charity Hospital. An uneventful recovery followed the operation. He returned several times for observation. His return this October, 1929, proved eventful. House-officer, Dr. McNair, Department of Ophthalmology, Otolaryngology, informed me that the patient could speak in a loud voice. Let us now hear him demonstrate this to you (patient speaks to the audience in a very audible voice.)

This is surely a vocal phenomenon. Deprived of a larynx, voice seems impossible without the help of an artificial voice apparatus which has been invented, and in recent years has been perfected. Our patient has no such help. He discovered his own method of vocal production. He does it by ventriloquism. He swallows air, and by forceful diaphragmatic and chest muscle action expels air from his stomach. These air-waves become sound-waves when they are reinforced by the sounding-board apparatus of the whole head. He does not use air-currents from his trachea, as this tube is entirely cut off, by a wall of fibrous tissue.

Let us briefly review what we know relative to voice production. The vocal cords only initiate the very first step, physiologically, in phonation. Many more elements

are brought into play in regions away from the larynx. The anatomical structures of the head which materially take part in voice production are, the tonsillar pillars, soft palate, tongue, teeth, accessory nasal sinuses, nasal chambers. And the reception of sound by the ear with the perception of tone variations is an other added factor in this highly complex arrangement for the production of voice, speech, and song. And again, superimposed upon this anatomic group of structures is the dominant psychologic element which also enters into voice production. We alter the tones, pitch of our voice by mental efforts. The mere mechanical dimensions of our larynx, large or small diameters, gives the low type or high type voice. But, the special peculiarity, color, individuality, of the human voice, is a question of overtones. And these are produced in the anatomic parts in the head, above the vocal cords. What makes our voice individual, something entirely different from any other voice in the wide world? It is the many modifications of these sound waves by the already enumerated structures localized in the head proper. Observation and experimentation have for several years reached the conclusion that this is the way by which the human voice is produced. Our patient furnishes a practical demonstration of this scientific fact. He reports that this is his own speaking voice of the past, before the laryngectomy. His wife, who should know, for many reasons, the voice of her mate, concurs in this report. This is "her man." The vocal results in this patient present many angles of real scientific interest to the voice teacher, physiologist, laryngologist. We

*Read before the Orleans Parish Medical Society, October 14, 1929.

esteem it a rare good fortune, that such a vocal phenomenon should have come within our ken for study and observation, and that this society is the first to hear my presentation of an extraordinary instance of "Voice Without a Larynx."

PURPURA HEMORRHAGICA IN PREGNANCY.

H. R. SHANDS, M. D.

JACKSON, MISS.

The modern conception of purpura hemorrhagica was clearly and fully presented before this Society by Cohn and Lemann in 1923. The majority of writers agree to the conclusions of Kaznelson. Keismann states: "This disease is due to a disturbance of the physiologic function of the spleen. The thrombopenia however it develops is probably due to changes in the cellular system scattered through the spleen, liver and certain lymph glands." In writing of purpura hemorrhagica Dr. Will Mayo states, "Patients are alternately better and worse, but always show evidence of the disease which eventually terminates in death." The value of splenectomy as a means of cure for true purpura hemorrhagica has been adequately proven in approximately one hundred cases.

The characteristic symptoms of purpura hemorrhagica are: 1. Petechiae and ecchymoses. 2. Bleeding from mucous membranes. 3. Prolonged bleeding time. 4. Greatly reduced platelet count. 5. Normal coagulation time. 6. Non-retractile clot.

The occurrence of purpura hemorrhagica as a complication of pregnancy is quite rare. Most of the modern text books on obstetrics do not mention it. Hirst says, "Purpura hemorrhagica is generally rapidly fatal, always interrupting the pregnancy. The foetus dies before the interruption of the pregnancy." There is no evidence that pregnancy predisposes to purpura, though it is a much more serious and fatal disease when occurring during pregnancy.

Rushmore made a thorough review of the literature in 1925, and found forty-seven reported cases of purpura complicating pregnancy. Some of these cases were simple purpura. The maternal mortality in this series was sixty per cent. Dr. Rubin, in discussing Rushmore's paper, states: "This condition is now divided into two types from a prognostic point of view. One is acute purpura hemorrhagica which is practically always fatal, and the other is chronic purpura hemorrhagica which some patients enter into if they are lucky enough to escape the acute attack. For the acute attack there is nothing to do."

CASE REPORT

Report of a case of true acute purpura hemorrhagica occurring during pregnancy with recovery. Mrs. E. V., aged 25 years, was brought to the Baptist Hospital by Dr. Parkes of Union on June 17, 1929. In the past history she described several attacks of influenza, and one attack of tonsillitis fifteen years ago following which her tonsils were removed. She began to menstruate regularly and normally at 14 years. At 16 years she had small hemorrhagic spots over her body. These disappeared after two or three days without treatment. She has had hemorrhagic spots on her body, especially during menstruation, at various times since she was 16 years old. Two years ago she had more trouble than usual with larger spots on her body and for the first time bled slightly from her gums, though this condition had not been at all serious until the onset of the present illness. Her father and mother are living and well with no history of any blood dyscrasia. Two years ago one sister was treated by Dr. Eshleman in New Orleans for a chronic purpura hemorrhagica. Under medical treatment she made no improvement in six weeks. At the end of this time Dr. Eshleman had her spleen removed and she made a prompt recovery and is still well.

This patient, the mother of two children, is now six and one half months pregnant. On June 15, 1929, she had a hard rigor followed by high fever. On June 16 she began to bleed from her gums and developed marked sub-conjunctival hemorrhage. She vomited blood on June 15 and 16. On the morning of June 17 her urine appeared to be pure blood.

On arrival her temperature was 104°, blood pressure 80, pulse 120, and she presented the picture of a desperately ill woman. Her tongue and lips were swollen and hemorrhagic. She had numerous hemorrhagic spots over her entire body. Her urine was so bloody that for two or three

days her bladder had to be irrigated to remove the clots. There was also vaginal bleeding. Blood count: Hemaglobin 53, bleeding time 8 minutes, coagulation time 3 minutes, red blood cells 3,560,000, leukocytes 1,100, platelets 24,000, small lymphocytes 78, large lymphocytes 8, neutrophils 14.

Brief report of progress record for the next week: On June 17, 1929 the patient was admitted in a critical condition bleeding from nearly all mucous membranes, hemorrhagic spots over body, blood shot eyes, blood clots in bladder. Given 700 c. c. of blood, citrate method, from husband. Roentgen-ray treatment over spleen for ten minutes. Coagulen and urotropin given. Temperature 104°.

June 18: Condition unchanged except temperature 101 4-5°. 60 c. c. of blood given by transfusion. Bladder irrigated to get rid of clots. 5 c. c. of 10 per cent calcium chloride given intravenously. Severe pain in abdomen. Vomiting large quantities of dark fluid. Mouth wash was used. Morphine gr. 1/8 P. R. N. Amount of urine diminished.

June 19: Gums stopped bleeding. Urine very bloody, no clots. Less pain. Temperature 100°. Uncomfortable night. Roentgen-ray treatment over spleen for ten minutes. 5 c. c. calcium chloride given intravenously.

June 20: Temperature 99°. Lips and tongue improving. No bleeding except bloody urine. Better night. 5 c. c. calcium chloride intravenously. B. P. 90. 700 c. c. of blood given by transfusion. Pain in back and abdomen.

June 21: Temperature 100 1/2°. Has had marked pain and cramping in abdomen. Roentgen-ray treatment for ten minutes over spleen. Quinin bisulphate ten grains by rectum every eight hours. 5 c. c. calcium intravenously. Hemaglobin 62, red blood cells 3,830,000, leukocytes 3,900, lymphocytes 61, platelets 65,000.

June 22: Urine normal in color. Temperature normal. Hemorrhagic spots clearing up. 600 c. c. of blood by transfusion. General condition better. Nourishing nicely. Roentgen-ray treatment ten minutes over spleen.

June 24: Condition improved. 700 c. c. of blood by transfusion. Clotting time and bleeding time 3 minutes. B. P. 95 over 35. Platelets 85,000.

June 25: Still improving. Sleeping well. B. P. 100 over 40. No nausea. No pain. Urine normal. Hemaglobin 64, coagulation time 2 1/2 minutes, red blood cells 3,810,000, white cells 4,400, bleeding time 3 minutes, platelets 90,000.

By June 27, ten days after admission, with the exception of a secondary anemia and low blood pressure and platelet count, she was approximately normal. During the ten days she was given

4,000 c. c. of blood, citrate method, no reactions, four roentgen-ray treatments, and five doses of calcium chloride intravenously. Although she had been given one gallon of blood by transfusion the platelets had only risen from 24,000 to 95,000 and blood pressure from 80 to 100. On this date at 9:00 a.m. she was operated upon under ether anesthesia. A long midline skin incision was made and the fascia first opened below the umbilicus and an abdominal hysterotomy done. A six and one half months living foetus was removed, after giving pituitrin and gynergen. There was no abnormal bleeding. The uterus was sutured and the incision in the fascia extended upward to near the ensiform. The spleen was then quickly and easily removed.

The time of the complete operation was thirty-five minutes. During the operation a blood transfusion and intravenous saline was given. There was no shock and very little hemorrhage. The patient was returned to her room in good condition and made an entirely uneventful and complete recovery, being discharged from the hospital eleven days later. By 5 p. m. on the day of operation the platelets had risen to 165,000. On June 28 the platelets were 220,000. On July 4 the platelets were 290,000 with hemaglobin 81 and red blood cells 4,500,000.

She was examined again on September 30 at which time she was quite well with a normal blood picture. The wound was firmly healed with no evidence of hernia. Her strength was so good that she voluntarily walked to the third floor of the hospital for the blood count instead of waiting for the elevator. She was seen again on November 30 at which time she was in excellent health. The foetus died three hours after delivery.

We were lead to adopt the above outlined preparatory treatment for the acute purpura by experience in two former cases. J. B. admitted to the Baptist Hospital February 21, 1929, with acute purpura with a temperature 104 1/2°. Two weeks before this he had been seen in the office with a mild purpura. He was given two blood transfusions and this condition cleared up promptly. We advised splenectomy at this time but the patient's family were not inclined to accept it. The acute phase developed two weeks later. Blood transfusions alone did not control the acute phase and he died three days later, temperature remaining around 104. H. C., aged 3 years, admitted to Baptist Hospital December 12, 1927, in a desperately critical condition, with profuse hemaglobinuria and very severe anemia. Red blood cells 1,500,000, hemaglobin 30, white cells over 100,000. He presented a blood picture of a terrible blood destruction, with marked anisocytosis, poikilocytosis and many normoblasts, temperature 101°,

pulse 140. A diagnosis of acute leukemia was made and repeated blood transfusions and roentgen-ray treatments over spleen given—spectacular recovery—discharged five days later. Now two years later the boy is still in excellent health with a normal blood picture.

In 1919 Stephan of Prague reported two cases of purpura hemorrhagica fulminans as cured by roentgen-ray treatment over the spleen. A few observers have reported similar happy results in single cases. Pancoast and his associates in 1925 were unable to duplicate the results of Stephan in any of six cases reported, none of their cases being cured, though five or six were temporarily improved by the roentgen-ray treatment. Some of their cases were also given blood transfusions. As a means of permanent cure they place no value on roentgen-ray treatment alone.

Larrabee of Boston has urged the advisability of large transfusions frequently repeated, in attempting the control of the acute stage of purpura. Whipple reports most satisfactory results in the treatment of chronic thrombocytopenia by splenectomy. He reviews seventy-three cases with six operative deaths and good late results in eight per cent of the followed cases. He states that the acute type is not as a rule saved by splenectomy. He found eight cases of purpura fulminans treated by splenectomy during this stage with seven operative deaths. These fulminating cases should certainly be given some treatment calculated to tide them over the acute stage so that a splenectomy can be safely done a little later.

In the September, 1929, number of the *Surgery, Gynecology and Obstetrics*, Deaver recommends the combination of blood transfusions, roentgen-ray over the spleen and calcium chloride intravenously in severely jaundiced cases in preparation for operation. This was exactly the combination of treatment given by us the preceding June and was successful in promptly controlling a desperately serious case of purpura hemorrhagica so that a splenectomy could be safely done. While this is only one case the outcome was so gratifying that this method

of treatment is recommended to you for your consideration and trial in a condition which has formerly been considered practically hopeless.

I find a record of only one other case of purpura hemorrhagica in pregnancy which was treated by splenectomy. This was an acute case and died.

Some criticism may be offered on the performance of the caesarean section at this operation. The reasons for so doing were briefly as follows: 1. The foetus is generally lost in purpura hemorrhagica anyhow. 2. Roentgen-ray treatment over the abdomen would probably have unfavorably affected the foetus if it had happened to live. 3. Miscarriage had been seriously threatened in the ten days of preparation, and a six months miscarriage following a serious abdominal operation is a grave and often fatal complication. 4. The cause of death in purpura hemorrhagica in pregnancy is most often uterine bleeding during or after delivery. Mechanically the splenectomy could be much more easily and quickly done after the uterus which almost filled the abdomen had been emptied. My judgment indicated to me that I could more safely handle the case in this way.

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REVIEWS

SURGICAL DISEASES OF THE PANCREAS*

I. M. GAGE, M. D.,†

NEW ORLEANS.

EMBRYOLOGY.

The pancreas arises, a little later than the liver, as two or three separate outgrowths, one from the dorsal surface of the duodenum usually a little above the liver outgrowth, and one or two from the lower part of the common bile duct. Of the latter outgrowths, that upon the left side may be wanting, and if formed, early disappears, whereas that on the right side continues its development to form what has been termed the ventral pancreas. Both this and the dorsal pancreas continue to elongate, the latter lying to the left of the portal vein, while the former, at first situated to the right of the vein, later grows across its ventral surface so as to come in contact with the dorsal gland with which it fuses so intimately that no separation line can be distinguished. The body and tail of the adult pancreas represent the original dorsal outgrowths, whereas the right ventral pancreas becomes the head.

Both the dorsal and ventral outgrowths early become lobated, and these lobes become secondarily; by this lobation repeating itself several times the compound tubular structure of the adult gland is acquired, the very numerous terminal lobes becoming the secreting acini, and the remaining portions becoming the ducts. Of the principal ducts, there are at first two; that of the dorsal pancreas, the duct of Santorini, opens into the duodenum on its dorsal surface, whereas that of the ventral outgrowth, the duct of Wirsung, opens into the choledochus. When the fusion of the two portions of the gland occur, an

anasomosis of branches of the two ducts develops; the proximal portion of the duct of Santorini may degenerate, so that the secretion of the entire gland empties into the common bile duct through the duct of Wirsung.

In the connective tissue which separates the lobules of the gland, groups of cells occur, which have no connection with the ducts of the gland, and from what are termed the islands of Langerhans. They arise by a differentiation of the cells which form the original pancreatic outgrowth, and have been distinguished in the dorsal pancreas of the guinea pig while it is still a solid outgrowth. They gradually separate from the remaining cells of the outgrowth and come to lie in the mesenchyme of the gland in groups, into which, finally, the blood vessels penetrate⁽¹⁾.

FUNCTION OF THE GLAND.

The pancreas, by its system of ventral connections with the gastric intestinal tract, passes its secretion into the alimentary canal, in order that the digestive process may proceed normally. The secretion of the pancreas is composed of digestive ferments which are actuated when entering the intestinal canal and aid in the digestion of fats, proteins, and carbohydrates.

The greatest function of the pancreas comes from its internal secretion, insulin, which governs carbohydrate metabolism. Therefore, in disease of the pancreas we have interference with digestive processes and the metabolism of carbohydrates, and these conditions are manifested through the organism as signs and symptoms of a diseased state of the pancreas.

ANATOMY OF PANCREAS.

The pancreas is a compound racemose gland, analagous in its structure to the salivary glands, though softer and less compactly arranged. It is long, irregular, and prismatic in shape, and of a reddish

*Presented before the Surgical Staff, April, 1929.

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white color. Its right extremity, being broad, is called the head, and is connected to the main portion of the organ, the body, by a slight constriction, the neck, whereas its left extremity gradually tapers to form the tail. It is situated transversally across the posterior wall of the abdomen at the back of the epigastric and left hypochondriac region. Its length varies from five to six inches, its breadth is an inch and a half, and its thickness from half an inch to an inch, being greater at its right extremity and along its upper border.

The head is lodged within the curve of the duodenum. The upper border is in contact with the first portion of the duodenum, its lower overlaps the third part, and its right and left borders overlap in front and insinuate themselves behind the second and fourth parts of the duodenum, respectively. In the groove between the duodenum and the right lateral lower borders in front are the anastomosing superior and inferior pancreatic-duodenal arteries; the common bile duct descends behind, along the right border, to its termination in the second part of the duodenum. The anterior surface is in relation to the transverse colon, gastroduodenal artery, superior mesentery artery and vein. The posterior surface is in relation with the inferior vena cava, the renal veins, the right crus of the diaphragm, and the aorta.

Blood Supply: Superior pancreatic duodenal branch of the gastroduodenal; the inferior pancreatic-duodenal branch of the superior mesenteric; the inferior pancreatic branch of the superior mesenteric; pancreatic branches of the hepatic and pancreatic branches of the splenic arteries.

Lymphatics: The lymphatics arise in a network within the lobules. Numerous collecting trunks pass to the surface of the pancreas. The splenic nodes receive most of the turnks. Others are received along the

aorta, nodes at the origin of the superior mesenteric artery, and nodes along the pancreatic-duodenal vessels. There is anastomosis of lymphatics with those of the gall-bladder.

Veins: The veins are the anterior pancreatic-duodenal branch of the superior mesenteric, the posterior pancreatic-duodenal branch, and the pancreatic branches of the portal, and the pancreatic branches of the splenic.

Nerves: The nerve supply is derived from the coeliac, superior mesenteric, and splenic plexuses.

DISEASES OF THE PANCREAS.

- I. Injuries to pancreas.
- II. Inflammatory conditions of pancreas.
 - A. Acute pancreatitis.
 1. Acute hemorrhagic.
 2. Gangrenous.
 3. Suppurative.
 - B. Sub-acute.
 - C. Chronic pancreatitis.
- III. Pancreatic cysts.
 - A. Retention cysts.
 - B. Proliferous cysts.
 1. Cyst adenoma.
 2. Cystic carcinoma.
 - C. Congenital cystic disease.
 - D. Dermoid cysts.
 - E. Hydatid cysts.
 - F. Hemorrhagic cysts.
 - G. Pseudo cysts.
- IV. Neoplasms of pancreas.
 - A. Adenoma of pancreas, rare.
 - B. Carcinoma of pancreas (most common new growth) (2 per cent of all cancers).
 - C. Sarcoma of pancreas, rare.
- V. Pancreatic calculus.

INJURIES.

The pancreas is rarely injured. This is due in part to the deep position that it occupies and in part to the ribs and overlying viscera.

The number of cases in which the pancreas has been grossly injured is probably small; slight injuries usually escape notice. The first case found in the literature was recorded by Travers in 1827. Many associated lesions are observed, *i. e.*, rupture of duodenum jejunum, tranverse mesocolon, etc. The blow which usually causes the injury is generally applied to the epigastrium, and the direction of the force is before backward. The injury may be a crushing one as between two cars or some blunt instrument of force applied directly over the epigastrium.

The signs and symptoms are those of shock which gradually deepens, signs of hemorrhage, and in later stages signs of peritonitis.

Gunshot wounds of the pancreas during the late war were almost invariably fatal due in part to lesions of associated viscera. Moynihan has one case to recover.

Treatment: Following a severe blow or jury to the upper abdomen the operation should never be completed without an examination of the pancreas. The operative principles which must be observed, as laid down by Moynihan, are:

A. Bleeding must be carefully arrested by ligature en masse or by suture, preferably the latter.

B. If the tail of the gland is very badly crushed, a resection must be performed.

C. If the duct of the gland is exposed, care must be taken to see that the sutures do not penetrate the duct.

D. Free drainage through the anterior wound; through a special posterior wound, or drainage through both must be provided.

E. The patient should also have supportive treatment. Here transfusion and glucose preoperatively are indicated, and postoperatively glucose plus insulin.

INFLAMMATORY CONDITIONS OF PANCREAS.

Infection may reach the pancreas (1) by way of the lymphatics, (2) through the ducts, (3) through the blood stream, or (4) by contiguity.

In 1908 Maugeret⁴ first demonstrated the connection of the efferent pancreatic lymph vessels with the efferent lymph vessels of the gall-bladder around the head of the pancreas, and believed that infection could easily gain access to the pancreas by this route.

Braithwaite,⁵ of London, has also shown that there is a connection of the lymphatics of the ileo-cecal region with those around the head of the pancreas and the ducts of the gall-bladder, and Wilkie⁶ has shown that there is 85 per cent involvement of the lymphatics along the gall-bladder ducts in acute and chronic infections of the gall-bladder.

The term "pancreatic lymphangitis" was applied to this condition by Arnsferger in 1911. Deaver and Pfeiffer,⁷ a year later, reported a detailed study upon the subject and considered it a process which precedes true interstitial pancreatitis.

In 1911 Franke⁸ demonstrated the anastomosis of the lymphatics of the gall-bladder with those of the head of the pancreas by means of Gerota's injection method, and found a node in the neck of the gall-bladder which communicated with the lymphatic vessels of the pancreas. This observation is important, since this node is enlarged frequently in cases of chronic pancreatitis. Bartels⁹ also pointed out that lymphatics of the head of the pancreas and duodenum are very closely related and possess no intervening lymph nodes, and Franke demonstrated the same condition in the efferent lymphatics of the gall-bladder.

If a block should occur further down in the lymphatic vessel, a reversal of the lymph flow may take place and flow into the efferent channels of the pancreas. In this way infection may take place.

Deaver maintains that chronic pancreatitis is the result of an infection of the interlobular connective tissue of the pancreas and, therefore, originates as a lymphangitis. The infection in some of the acute cases is carried by the lymphatics, as the disease is not always associated with the lodgement of a gallstone in the ampulla of Vater, causing retrojection of bile into the pancreatic duct, and furthermore, in a fair percentage of the cases gallstones are not present.

The fact that chronic pancreatitis is most frequently confined to the head, and that the common duct passes through the head in 80 per cent of the cases, whereas the tail is relatively immune, lends considerable weight to the lymphatic route.

Deaver and Pfeiffer, in examining 51 cases of chronic pancreatitis, discovered the head alone to be affected in 42; in 9 cases only was the tail involved, and in 27 cases there was evidence of involvement of the lymph nodes at the head of the pancreas.

The existence of a localized hepatitis in the vicinity of the gall-bladder, in addition to pancreatitis, gave rise to the opinion that there was a close association between the lymphatics of the liver, gall-bladder, and pancreas. Graham and Peterman¹⁰ (1922) injected organisms into the portal vein in order to produce infection of lymphatics of liver. Examination of the biliary tract at autopsy revealed injection of the gall-bladder, common duct, and pancreas, and a definite lymphangitis was shown to exist in the pancreas by histological study.

In 1927 Kaufman¹¹ repeated these experiments and found the same lesions as Graham and Peterman, but in addition he noted changes in other organs—*i. e.*, the

spleen, kidney, heart, and lungs. The recovery of the organism from the heart's blood in pure culture led him to believe that he was dealing with a bacteremia.

Kaufman produced cholecystitis in cats by injecting bacteria into the gall-bladder of the 26 animals so infected; only 2 showed bands of small round cells invading the pancreas. As Ordway¹² described the same appearance in normal cats, Kaufman concluded that infection of the pancreas by the way of the lymphatics is unlikely. However, clinical experience shows that in the adult with one definite pathological lesion there are usually other pathological states associated. In chronic appendicitis there is frequently an associated chronic cholecystitis. Chronic cholecystitis seems to be the etiological factor in a large number of cases of chronic pancreatitis. It is probable that the lymphatic arrangement in the cat is not comparable to that of an adult human being.

ACUTE INFECTION OF PANCREAS.

- (1) Acute hemorrhagic pancreatitis.
- (2) Gangrenous.
- (3) Suppurative.

In acute pancreatitis the condition is entirely different from the chronic form. In the latter type the pathological picture is of a slow progressive type, and produces round cell infiltration and fibrosis. There is no activation of the pancreatic ferments, therefore no destruction of the gland tissue.

In the acute type of pancreatitis there is activation of the pancreatic ferments, setting free in the surrounding tissues trypsinogen derived from gland cells. The transformation of trypsinogen into trypsin occurs in one or two ways: (1) Enterokinase, as may happen rarely in coincident injury of the pancreas and intestines, (2) an activating substance produced when the gland itself undergoes autolysis. It is known from the post-mortem digestion of the pancreas that the substances necessary to bring about autolysis of the pancreas is liberated by death of the pancreatic cells,

and that this substance activates the trypsinogen. This is illustrated by the introduction of a normal pancreas into the abdominal cavity of a normal dog which will produce death within twenty-four hours, autopsy showing the picture of acute hemorrhagic pancreatitis.

The theory as to the cause of acute hemorrhagic pancreatitis has centered around the introduction of bile into the pancreatic duct. Claude Bernard, in 1856, when he injected bile and sweet oil into the pancreatic duct, produced acute necrosis of the gland.

In 1899 Lanereaux¹³ suggested that gall stones lodged in the ampulla of Vater might cause pancreatitis by obstructing the pancreatic duct.

Opie,¹⁴ in 1901, reported a case in which necropsy revealed a gall stone lodged in the ampulla of Vater. The stone obstructed the outflow of bile into the duodenum, but did not prevent its regurgitation into the pancreatic duct. This observation was followed by many comprehensive studies to show that the retrojection of bile into one pancreatic duct would or would not produce acute hemorrhagic pancreatitis.

Flexner,¹⁵ Carnot, Opie, and others showed that the retrojection of bile, especially the bile salts (Flexner) would produce acute hemorrhagic pancreatitis.

Polya,¹⁶ in 1912, indicated that acute pancreatitis was not as likely to occur following injection of duodenal contents, infected bile, or bacteria as when a very active solution of trypsin was used. In 1913 Nordman¹⁷ showed that it was necessary to tie both ducts to produce stasis of pancreatic secretion within the ducts of the gland before pancreatitis would develop. Archibald and Gibbons¹⁸ (1921) found when normal bile was injected into the pancreatic duct that an aseptic necrosis resulted, whereas the injection of infected bile produced more congestion, edema, hemorrhage, and fat necrosis. The observations of Flexner, Polya, and Nordman suggest that activa-

tion of the pancreatic juice is of a chemical nature, and that infection may play a role in the production of the chemical agent. Moynihan believes that the immediate cause of the hemorrhage necrosis is by activation of the pancreatic secretion by some agent within the gland substance.

Egdah,¹⁹ in a series of 105 post mortem examinations in acute pancreatitis, found 32 cases associated with gastro-duodenitis and 17 with a history of chronic alcoholism.

Archibald thinks that the retrojection of bile into the pancreatic duct is the cause of acute pancreatitis, and thinks the mechanism by which this is brought about is by a spasm of the sphincter of Oddi.

In 1921 Mann and Giordano²⁹ investigated from anatomical and experimental aspects the role played by the bile in producing acute pancreatitis. The anatomic relations of the common duct to the duct of Wirsung were carefully reviewed in 200 consecutive autopsies. In 3.5 per cent of the cases it was found that it would be anatomically possible for obstruction at the ampulla to convert the two ducts into a continuous channel and permit bile to pass into the pancreatic duct. They concluded that the percentage of cases in which the two ducts could be converted into one by the contracture of sphincter of Oddi would be very small. In 1921 Judd studied the question anatomically, in order to determine the percentage of instances in which the two ducts could be converted into one, either by a stone obstructing the ampulla of Vater or spasm of the sphincter of Oddi. He found that this was possible in 4.5 per cent of the bodies examined. Mann showed that the bile would have to be under pressure of 800 mm. of water and that in all cases it passed into the duct at less than 500 mm. Bile was injected into the duct at pressures simulating that which could possibly occur in the common duct and no pancreatitis developed except in one case in which there was fat necrosis. When bile was injected with a syringe into the duct, the pressure

being much greater than normal, typical hemorrhagic pancreatitis and death followed in many instances.

Acute infection of the pancreas by way of the blood stream is rare, although chronic pancreatitis, which may result from toxic or constitutional disorders carried by the way of the blood, is more frequent. Pancreatitis occasionally develops in the course of acute infectious diseases; and Deaver has noticed an incidence of 6.5 per cent occurring in epidemic diseases. However, the condition is not serious, as they found one death attributal to that etiological factor.

At times the pancreas becomes infected by contiguity of tissue, especially rupture of duodenal and gastric ulcers. Ochsner²¹ reported a case of abscess of the pancreas, following a rupture of a gastric ulcer on the posterior wall of the stomach. Abscess of any of the adjacent viscera may extend to and involve the pancreas.

SIGNS AND SYMPTOMS OF INFLAMMATORY CONDITIONS OF THE PANCREAS.

Symptoms: In chronic pancreatitis the symptoms are indefinite. It is rarely met with before the age of 40, although it may occur earlier. The symptoms are usually referred to related viscera, that is, those pathological states that occur in the gall-bladder and liver, and occasionally the appendix. The symptoms are usually referable to symptoms of chronic gall-bladder disease, which probably is the most frequent forerunner of chronic pancreatitis. The passage of bulky, soft, fetid stools, containing undigested fat and protein, also aids in arriving at a diagnosis of chronic pancreatitis. One of the most difficult diagnostic problems is that of differentiating chronic pancreatitis of a severe degree from carcinoma of the pancreas. This is true clinically as well as at operation.

Treatment: The treatment of chronic pancreatitis is its prevention. By early recognition of processes within the appendix, gall-bladder and liver, and by the re-

moval of diseased gall-bladders and appendices, we are able to prevent the constant lymphatic absorption of toxins from these foci which invariably lead to chronic inflammatory changes in the pancreas.

Where the chronic pancreatitis has existed for some time, it becomes difficult to differentiate the condition from carcinoma if jaundice is present, which symptom sometimes accompanies chronic pancreatitis. If this condition exists, then cholecyst-duodenostomy or cholecyst-gastrotomy is the procedure of choice.

ACUTE PANCREATITIS.

This is one of the most severe calamities that occurs in connection with the abdominal viscera. Of all the pathological processes of an acute nature that occur to a human being, this is the most agonizing, and one that is attended by a high mortality.

This disease was divided into three types by Fitz of Boston, in 1889, (*Med. Record*, 35:197), who was one of the first to describe the condition of acute pancreatitis. The types are (1) hemorrhagic, (2) gangrenous, and (3) suppurative. The types vary only in degree, being the sequence of each pathological state.

The etiology has been discussed above. However, there are several theories. (1) regurgitation of bile into the pancreatic duct by (a) gall stone obstructing the papilla of Vater; (b) spasm of sphincter of Oddi; (2) acute lymphangitis; (3) infection through the blood stream; (4) vascular thrombosis of the pancreatic vessels.

Symptoms: The onset is sudden. There is the most severe agonizing pain, (more so than in any other abdominal catastrophe), in the epigastrium. The pain is probably the outstanding symptom, and is confined to the epigastrium at first; later the pain may be felt in the back, and even in both loins. The pain is so intense that the patient immediately collapses. The face is pallid, and the face and limbs are cold. There is never any doubt about the pres-

ence of shock in acute pancreatitis. Vomiting is almost always present, probably due to sudden infiltration around the head of the pancreas and duodenum, which Hunt²² believes produces marked irritation of the duodenum and possible obstruction. Hunt also believes that the sudden liberation of insulin, as well as split proteins could account for the shock, the liberation of insulin producing a sudden hypoglycemia. The face may be livid and patches of a slate blue color may be distributed irregularly over the surface of the abdomen and legs. Halstead first called attention to this condition. The abdomen is rigid, being most marked above the umbilicus; even in the early hours there may be a definite fullness noted above the umbilicus. There is one laboratory method that may be of considerable aid in the diagnosis of acute pancreatitis, and that is the estimation of the diastase in the blood. The value of this test has been emphasized by Guleke,²³ Unger,²⁴ Hess⁵² and DeTakats.²⁶ DeTakats advises the use of the method of Wohlgemuth because of its simplicity. In 97 cases of acute necrosis of the pancreas collected by Schmieden and pancreas collected by Schmieden and Sebering, 78 cases (80 per cent), showed abnormally high figures for diastase in the blood. DeTakats and Nathansan found high figures for diastase in the blood in their experimental work on the correlations of the internal and external pancreatic secretions.

The condition must be differentiated from ruptured gastric ulcer, duodenal ulcer, acute intestinal obstruction, and rupture of tubal pregnancy.

Treatment: Immediate operation and drainage of the pancreas is indicated. However, as suggested by Hunt, the patient should be detoxicated by giving sodium chlorid and glucose intravenously before operation, because there is evidence of high intestinal obstruction which requires treatment, as well as the sudden flooding of the patient with insulin resulting in a hypoglycemia. The same medication should follow operation, and insulin should probably

be given to rest the pancreas. This treatment should be controlled by blood sugar estimations.

The surgical approach to the pancreas is through the gastrohepatic omentum, gastrocolic omentum, and transverse mesocolon, the posterior approach through the back being seldom used. The pancreas should be exposed, and the gland capsule should be opened and thorough drainage established by means of large gauze drains surrounded by rubber dam tissue. The omentum should be used to wall off the rest of the abdominal cavity. In this connection Royal Watkins²⁷ gives some very interesting statistics in regard to the routes used in the approach and drainage of acute pancreatitis. There were 8 cases drained through the gastrohepatic omentum, with 1 recovery and 6 deaths; 3 drained through foramen of Winslow, with 1 recovery and 2 deaths; 1 drained through the common duct, with recovery.

The drainage through the gastrocolic omentum allows the suturing of the omentum to the peritoneum around the drainage tubes and prevents dissemination of the toxic products into the peritoneal cavity and their absorption. Jones, as quoted by Moynihan, reported 56 cases from the Massachusetts General Hospital, with a mortality of 60.7 per cent. The mortality of acute pancreatic necrosis without abscess formation was 72.3 per cent. Moynihan reported 21 cases from the Leeds General Infirmary between the years 1915-1924, with a mortality of 38 per cent. There were 8 males and 13 females.

Subacute pancreatitis is considered by Moynihan as occupying a position between the acute and gangrenous types. The most frequent condition found at operation is an abscess. These cases should be treated in the same manner as acute pancreatitis as far as operative procedures are concerned.

CYSTS OF PANCREAS.

Cysts of the pancreas are divided into two main groups, true cysts and pseudocysts;

the former originating in the pancreatic tissue proper, and the latter as a rule, arising in, and confined to, the cavity of the lesser sac. The pseudocysts usually follow trauma with spilling of pancreatic secretion into the lesser sac, where it is confined. The contents may be hemorrhagic or clear, depending on the amount of hemorrhage present in the cystic cavity. The hemorrhagic cysts usually follow subacute or acute hemorrhagic pancreatitis of mild degree.

True cysts usually result from one of the following conditions, which may then block the excretory duct of the pancreas, (1) stones impacted in the duct, (2) cicatricial-stenosis, (3) pressure on the duct from without, (4) dislocation of part of the gland.

The proliferation cyst may be benign or malignant. At times it is almost impossible to separate the benign from the malignant forms, pathologically.

Congenital cysts usually are observed only on rare occasions, and are similar to the congenital cystic diseases of the kidneys and liver.

Hydatid cysts of the pancreas, as hydatid cysts of the spleen, are very rare.

Dermoid cysts may occur in the pancreas. Warren and Dermis²⁹ reported a case in 1923, and Judd³⁰ reported a case occurring in the tail of the pancreas in 1921.

Cysts occur more frequently in males than females.

Symptoms: The symptoms of pancreatic cyst are usually those of pancreatic deficiency and the symptoms arising from pressure on surrounding organs. The patient may be ill and complain of indefinite symptoms, indigestion, nausea, vomiting, loss of weight, dysfunction of the normal motility of the gastro-intestinal tract, constipation alternating with diarrhea, and at times stools may show blood, associated in some cases with jaundice. The outstanding symptom is a tumor in the

epigastrium that is fluctuating in character and is not freely movable. There is pain of a dull character, which is confined to the epigastrium, but may radiate to the back; at times the pain is very acute. The patient shows exacerbation of symptoms which may come every two or three months. At this time all symptoms are increased in severity.

Roentgenray study of the gastrointestinal tract is a very important aid in diagnosis, as the pancreatic cyst has a definite effect on the curve of the duodenum and should be used when possible.

Pancreatic cyst must be differentiated from ovarian cyst, hydrops of gall-bladder, cysts of suprarenal capsule, omental cyst, cyst of mesentery, hydronephrosis, cyst of spleen (rare), retroperitoneal cyst, and aneurysm.

Treatment: Probably the best treatment is incision with suturing of the cystic sac to the abdominal wall. This allows free drainage. It is seldom possible to extirpate the cyst because of its attachments to important organs and blood vessels; however, in some instances it is practicable to completely extirpate the entire cyst. This should always be done whenever possible.

MALIGNANT TUMORS OF THE PANCREAS.

Cancer of the pancreas is found in about 2 per cent of autopsies on malignant tumors. It is the most frequent tumor of the pancreas. It may be secondary to carcinoma of the stomach, or from the ampulla of Vater; and, when both the duodenum and pancreas are involved, it may arise from aberrant pancreatic tissue in the duodenum.

The location of the tumor is, in the great majority of cases, confined to the head of the pancreas; however, it may diffuse through the entire organ. Ewing⁽³¹⁾ collected 386 cases from the literature and classified their distribution as follows: 158 were diffuse, 156 limited to the head, 28 in the body, and 12 in the tail.

Although early tumors may be limited to the pancreas, they soon invade the surrounding structures. The early metastases are to the regional lymph nodes and the liver. Generalized metastasis is not common, probably because the disease is rapidly fatal. Carcinoma of the pancreas is more common in men than women, the ratio being 6 to 1. The disease rarely occurs before 40; however, it has been found in children.

Symptoms: The first symptoms are usually vague abdominal pain and indigestion. Occasionally the onset is sudden with pain simulating gall stone colic. Judd and Parker⁽³²⁾ studied 34 cases of carcinoma of pancreas, and, contrary to general teaching, colic with jaundice occurred in 35.29 per cent of these cases, pain with jaundice in 23.52 per cent, and colic, pain, and jaundice occurred in 61.75 per cent, and jaundice without pain in only 38.22 per cent of cases. Intermittent jaundice occurred in 5 of the 12 cases with colic alone. Gall stones were found in one case. Jaundice is an early symptom, due to compression of the common duct, which passes through the head of the pancreas (in 80 per cent of individuals, Mayo, C. H.). The jaundice is progressive and lasting; cachexia and emaciation of extreme degree occur in the later states. The gall-bladder becomes enlarged and hydropic (Law of Courvoisier, 1890). Elkin⁽³³⁾, of Atlanta, reported 25 cases of carcinoma of the pancreas, and showed that in his series 22 (88 per cent) showed distinct enlargement of the gall-bladder.

Diagnosis: Sudden onset of jaundice, which increases in severity, clay colored stools, large, fluffy, fatty stools, undigested fat and protein found in examination of stools, loss of appetite, and emaciation occurring in a patient past 30 years is very suggestive of carcinoma of the pancreas.

Roentgen-ray at times shows increased diameter of duodenal curve.

Treatment: The treatment is palliative, mainly by short-circuiting the bile into the gastrointestinal tract by cholecystogastrostomy or cholecystoduodenostomy. Where the growth is pedunculated or situated in the tail of the pancreas without metastasis, partial pancreatectomy may be accomplished with fair hope of cure.

PANCREATIC CALCULUS.

The occurrence of stone in the pancreas was first recorded by Graff in 1667. In 1883 Johnson collected 35 recorded cases. The fullest account was given by Giudiceandrea, who recorded 48 cases from the literature with a report of two personal cases, in 1896.

The stones are generally white, greyish white, or yellowish white in color, rounded, ovoid, or elongated like a date stone; facets are rarely seen on them. They are found in all parts of the ducts of the pancreas, though much more frequently in the head; in the extremity of the tail of the gland they are rarely seen. The calculi may branch like coral, the trunk of the stone lying in the main duct and its offshoots in the secondary ducts. At times the duct of Wirsung is found packed full of stones, with sand or fine rounded pellets. As many as three hundred stones have been found in a single case. The stones are chiefly composed of phosphorus and carbon salts. Some stone may be formed of oxalate of lime stone.

Schmieden and Sebening⁽³⁴⁾ recorded a series of twenty cases of pancreatic stones, eleven of which were removed at operation. All of these patients recovered. Of the twenty cases of pancreatic stone, only two were demonstrated by the roentgen ray.

Diagnosis: The diagnosis of pancreatic calculi has been rarely made preoperatively and unless constantly kept in mind when exploring the pancreas, especially when the gall-bladder shows no pathology

and the patient has symptoms of biliary stones, they may even be overlooked then.

The symptoms usually consist of persistent attacks of epigastric pain, uneasiness of the type of hepatic, colic, though less severe and unattended until very late in the history by jaundice. The pain which is in the epigastric region may at times radiate through.

The stools are sometimes frothy, characteristic of the stools seen in cases of chronic pancreas may accompany pancreatic calculi of long standing. There may be sugar in the urine accompanied by a hyperglycemia, and that diastase of the blood may be increased. Roentgenogram is of little value, as only a very small per cent will cast a shadow.

Treatment: The treatment is entirely surgical. The pancreas is exposed through an upper abdominal incision, with subsequent opening of either the transverse mesocolon or the gastro-colic omentum. The pancreas is thoroughly palpated from the head to the tail for presence of calculi. Where the stone is located near the ampullo of Vater, the transduodenal approach with splitting of the papilla will be found very useful, as the stone can then be lifted out from the duct with a scoop. When the stone is located farther back along the duct of Wirsung in the body of the pancreas, the pancreas should be incised, the duct opened, the calculus removed, the gland sutured with catgut, and drainage established. The drainage tubes should pass through the gastro-colic omentum in order that the gastro-colic omentum can be sutured to the parietal peritoneum to prevent leakage into the general peritoneal cavity.

Post-operative treatment should consist of the usual sedatives, glucose and insulin given frequently with a constant check on the blood sugar. In the post-operative care the internist should take an important part. The patient should be kept under observation for a period of years.

SURGERY OF THE PANCREAS IN DIABETES.

Of recent development in this country is the experimental work of DeTakats in Chicago. He has shown that by either, complete severance of the tail of the pancreas from the body of the gland, or by ligating the body of the gland near the tail, with just enough pressure of the ligature to obstruct the duct of Wirsung, that a most interesting change takes place in the tail of the pancreas so separated from the body of the gland.

The changes noted are the production of fibrosis and disappearance of the excretory glandular part with an increase in the islet tissue, this increase in islet tissue resulting in an increased tolerance for carbohydrates. Where the tail has been entirely severed from the body of the pancreas the productive fibrosis increases to such an extent that not only is the excretory glandular part destroyed but also the islet tissue. However, when the body near the tail is ligated with only sufficient pressure to obstruct the duct, this marked fibrosis does not occur. The excretory glandular part becomes destroyed but the islet tissue increases in amount as well as in activity.

This procedure has been performed on a case of severe juvenile diabetes with most encouraging results. The carbohydrate tolerance increased and the patient's insulin is gradually reduced. I believe that this procedure has great promise in selected cases. However, we must wait patiently for accurate observations extending over a period of years before the procedure can be expected as a standard procedure. DeTakats deserves a great deal of credit for blazing the trail in an unexplored surgical field.

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CURRENT PROBLEMS OF MEDICAL EDUCATION.—All true education is self-education. There is a distinct shift in many medical schools now toward placing greater responsibility on the student for his own training in an effort to emphasize learning by the student in distinction to teaching by the faculty. It is in the direction of individualizing instruction and providing opportunities for learning, for self-development and for independent work. This new emphasis is illustrated by the breaking down of the rigid class system; the discontinuance of uniform time and course schedules; the introduction of small teaching sections; personal contacts between students and instructors; provision for reasonable

free time for reading, individual work and leisure; a reduction in the amount of lecturing, and the providing of opportunities for students who desire and are competent to do independent work. The aim is to develop minds capable of finding and appraising evidence and drawing conclusions based on sound reasoning which will provide a permanent intellectual equipment, resourcefulness and sound habits as well as methods of study that will permit the student to continue his own self-education throughout his entire professional life, a continuing education which has already been emphasized as the most important factor in providing an adequate medical service for the community.—Rappleye, W. C.: *J. A. M. A.*, 94:916, 1930.

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YELLOW FEVER.

It may be recalled that a few years ago a leptospira was isolated by Noguchi from the blood of patients in Central and South America presumably ill with yellow fever, which he named *Leptospira icteroides* and which he believed was the cause of the disease. Several years later (1925) the West African Yellow Fever Commission undertook to investigate the disease as it occurred in Africa. By 1928, as a result of the studies of this Commission and of other independent investigators, considerable doubt hazed the whole question of the etiology of yellow

fever. Noguchi's work was not confirmed and these problems arose: first, was yellow fever the same in America as in Africa? second, was the disease studied by Noguchi really yellow fever? The answer to these questions seems to be satisfactorily answered in a recent article by Sawyer, Kit-chen, Frobisher and Lloyd.* Extensive bacteriologic, immunologic and pathologic studies of humans who had had yellow fever and of monkeys given the disease were made by this group. They conclude from their investigations that yellow fever is the same whether occurring in the Old or New World; that cases of Weil's disease (leptospiral jaundice) were present among those cases diagnosed as yellow fever studied by No-guchi; that *Leptospira icteroides* is an in-citant of a form of infectious jaundice, re-sembling closely yellow fever and that "No-guchi's discoveries become of the greatest significance in respect to the epidemiology and causation of yellow fever and of infec-tious jaundice, previously confused one with the other." In the future due attention must be paid, during supposed yellow fever out-breaks, to the two kinds of jaundice, the one due to yelow fever virus and trans-mitted by the mosquito, the other to leptospirae and not controllable by anti-mosquito measures.

POST-GRADUATE TEACHING.

Under the auspices of the University of Minnesota, Department of Medicine, there will be held the first part of July a sym-posium on the Kidney in Health and Di-sease. The program that has been arranged for this meeting could hardly be improved upon. Undoubtedly the most outstanding

*The Relationship of Yellow Fever of the Western Hemisphere to That of Africa and to Leptospiral Jaundice, J. Exper. Med., 51:493, 1930.

men in the world who have made special studies of the kidney will be present to present and discuss certain phases of their subject. There appears on the program the names of such men as Volhard, Frankford-on-the-Main, Germany, certainly the greatest and best known worker in the fields of renal disease; Richards who has made epochal contributions to the physiology of the glomerulus; Rehberg from Copenhagen; Rowntree from Mayo Clinic; Berglund, notable for his work on disturbed physiology of the kidney and more particularly changes in the blood chemistry; Hirschfelder; Longcope; besides other men who are interested in other phases of the subject and have made a special study of them.

This symposium is open to any medical practitioner in the United States without cost. Special arrangements have been made to accommodate visiting doctors in the dormitories of the University. Any individual interested and wishing greater amount of information concerning this meeting should write to Dr. H. Burgland, University Hospital, Minneapolis, Minnesota.

This symposium offered to the practitioners of medicine in the United States illustrates very well indeed the growing tendency for medical schools and universities and medical societies to give to the practitioners of medicine special courses which will refresh and reburnish the minds of the hearers. It is an absolute impossibility for a busy practitioner of medicine to keep up to date on advancing phases of medicine. These courses offer the opportunity to him of getting and securing an immense amount of information, reliable and authentic. It is being very generally recognized by educators that these review weeks, symposium weeks, and so on have a distinct place in medicinal education. They are valuable and for the most part are eagerly sought after and grasped by the practitioner.

DECEPTIVE ADVERTISEMENTS.

Under the guise of a title suggesting a scientific publication and camouflaged by an appearance which would make the physicians unaware of the type of publication, the notorious Koch of Detroit has flooded this section of the country with a pseudo-medical journal which is just about the extreme limit of audacity. It may be that an occasional physician of repute is not aware of the so-called cancer cure elaborated by this man Koch. If not, it might be well to warn him that the Koch laboratories are putting out a secret nostrum spoken of as an synthetic toxin for the cure of cancer and its allied diseases, which has been totally and repeatedly refuted by scientists and thinking physicians. The man himself has been expelled from the medical organizations of organized medicine. Descending from what he originally claimed was a scientific preparation he has come out boldly with many schemes to advertise a product of which the claims are unfounded. The rewards that come to he who is sufficiently unethical to advertise, and low enough to advertise a secret substance, may be inferred from the fact that 150,000 copies of this journal are published, according to the notice made on page 23. It pays to advertise; assumedly the expense of printing and mailing this journal must be enormous, but it must pay or the astute business men of the Koch concern would not countenance such expenditures.

Physicians throughout Louisiana and Mississippi who are not familiar with Koch's efforts to achieve fortune through the suffering of others are warned of the character of his preparation. The majority of those who do know of this "cancer cure" can not help but feel insulted that their intelligence and integrity should be considered so low that they would pay any attention to such a journal as has been recently sent through the mails. Do not consign it to the waste paper basket, throw it in the garbage can.

HOSPITAL STAFF TRANSACTIONS

VICKSKBUFG SANITARIUM AND CRAW- FORD STREET HOSPITAL.

Staff Meeting, April 10, 1930.

Abstract: A Few Remarks on Spinal Anaesthesia in Abdominal Surgery.—Dr. J. A. K. Birchett, Jr.

Subarachnoid or spinal anaesthesia was first described by Corning, the pioneer of local anaesthesia, in 1885. His work consisted of two examples, one performed on the dog, the other on a human being complaining of spinal irritation. He injected cocaine between the spinous processes thence to be carried to the cord by way of the veins which run to the venous plexus of the cord. Later in 1888 he treated and gave relief to four patients with pain from spinal cord lesions. At that time he did not realize or emphasize its use as a surgical anaesthetic. In 1894 he published a monograph on "Irrigation of the Cauda Equine with Medical Fluids." In this he advised that cocaine be injected directly into the lumbar sac by puncturing between the first and second lumbar vertebrae. Interesting as this fact is, especially in its relationship to present day surgery and anaesthesia, it attracted slight attention and was soon lost until Bier in 1899 performed eight anaesthesias by the lumbar puncture route, one on himself, one on his assistant, and six on patients. The larger the dose of cocaine, the higher was the level of anaesthesia noted. One extended as high as the umbilicus and on six, major operations could be done painlessly. Unfortunately the prompt disadvantage of violent headache lasting for days presented itself. The method did not meet with favor in Germany but in France and America it was used increasingly. Cocaine having proved dangerous, the advent of stovain introduced by Fourneau in 1904 and the use of the suprarenal preparations of the day, caused the method to be recommended for general clinical use.

The spinal fluid which is the medium into which the anaesthetic solution is introduced, is worthy of review. The specific gravity is of importance in reference to the fluid to be introduced. The amount of spinal fluid is from fifty to one hundred and fifty cc. and the spinal pressure is sixty to one hundred mm. of mercury with the patient in the recumbent position. Changes in posture affect the fluid position. In the sitting posture the fluid reaches the upper dorsal region of the cord. In slight Trendelenburg position, not a drop can be obtained on puncture, as the fluid gravitates away from the lumbar region. If coloring matter is introduced in the lumbar region and the patient is then placed in high Trendelenburg posture, the coloring matter is noted at the base of the brain.

This is of importance for if the anaesthetic solution mixes thoroughly with the fluid in too high a concentration there is danger of anaesthesia of the brain structures and the higher centers. To overcome this Barker employs the use of fluid heavier than the spinal fluid or by adding a substance with greater viscosity. This will, with difficulty mix with the spinal fluid and will stay in the most dependent part. In this way the position and height of anaesthesia can be controlled by changing the position of the patient.

Of the anaesthetic solutions employed, cocaine was first used and abandoned due to toxicity. Tropococain, discovered in 1891, was first used by Chadbourne in Boston. This is readily soluble, is non-irritating and is one-third as toxic as cocaine. It cannot be used with adrenalin. Stovain, previously mentioned, is readily soluble in water, may be boiled, has antiseptic properties, but its action is fleeting and it will cause gangrene if allowed to come in contact with tissues. Its action is rapid and muscles in the anaesthetic area become rapidly paralyzed. Novocain, a German preparation, was developed in 1905 and used extensively. It is readily soluble, can be heated to 120°C., but should not be boiled with adrenalin as it is decomposed if boiled too long. It is one-seventh as toxic as cocaine, has no effect on the heart, in ordinary doses does not lower blood pressure, and is non-irritating to the tissues. Novocain affects the motor nerves less than stovain but in novocain the danger of respiratory paralysis is much less. A five per cent isotonic solution is used,—two cc. for operation on the genital organs, two and one-half cc. for operation on the legs and groins, and two and one-half to three cc. for laparotomy. In preparing this anaesthetic, some technicians dissolve tablets of 0.05 gms. of novocain in spinal fluid and reinject this mixture.

As to complications and sequelae met with in spinal anesthesia, during the operation the patient may be seized with nausea, retching and vomiting and show evidence of extreme shock. Severe headache and even cessation of respiration may occur. A main group of symptoms is spoken of as "meningism," which is a syndrome arising from a septic irritation of the meninges and due to leakage through the arachnoid puncture after the needle is withdrawn. Its train of symptoms are intense headache, dizziness, nausea, vomiting and pain in the back.

Headache is present usually after novocain and stovain; never as rule after tropococain. In one thousand cases in which spinal anaesthesia was used in the Jackson Clinic, the success of the procedure was in part due to the discovery of

ephedrine. Given before spinal injection, all shock is comparatively eliminated because the vascular tone is maintained. Under spinocain satisfactory anaesthesia was not always obtained, and in twenty-five per cent anaesthesia had to be completed with inhalation. Spinal anaesthesia has been used in all major operations below the diaphragm and in cystoscopy. Some have operated on the thyroid, mastoid, and cervical glands.

Labat states that spinal anaesthesia can not be used in operations for ruptured viscera, such as perforated ulcer and appendix, as it stimulates peristalsis and spreads infection. In the Jackson clinic it was found that the viscera were quieted and relaxed, also that the relaxation is so complete that it is not necessary to use packs. Post-operative complications such as pneumonia and phlebitis are unknown and surgery is facilitated twenty-five per cent because of the relaxation obtained.

No contra indications are known except cerebral neoplasm. Hypotension is controlled by ephedrine. Headache is practically eliminated by the use of a twenty-two gauge needle for the puncture. Ephedrine offsets nausea and vomiting due to fall in blood pressure. Barbitol will control the danger of novocain reaction.

Technic: Give $1/3$ grain of pantopon and $1/150$ grain of scopolomine. Give ephedrine. Wait five minutes after ephedrine before injecting the novocain solution.

During the past month in this hospital spinal anaesthesia has been successfully used in operations for carcinoma of the omentum, repair of laceration of urethra, hemorrhoidectomy, post-operative ventral herni, caesarian section salpingectomy, oophorectomy, and appendectomy, hysterectomy with double salpingectomy and oophorectomy, supra public prostatectomy, hysterec-tomy (3 cases), salpingectomy and appendectomy, hysterectomy, double salpingectomy and oophorectomy, and peritonitis with gangrenous appendix.

Abstract: Carcinoma of the Appendix.—Dr. G. M. Street.

Patient: White female, aged 17 years, single, student. Admitted to hospital March 3, 1930.

Chief Complaint: Severe pain in right lower quadrant.

Present Illness: Began two weeks ago with severe pain in right lower quadrant; some nausea; no vomiting. Began at 5 a. m. and pain waked patient up. No diarrhea; severe pain lasted one hour and then has been intermittent ever since. Constipated.

Past History: Has had influenza, whooping cough, measles; rheumatism at the age of three. Tonsils and adenoids removed at age of nine; no other operations. Suffers with frequent severe headaches, both frontal and occipital. No history of pyelitis. Present weight under average about eight pounds. Menstrual periods have always been irregular and too infrequent. Has suffered with backache most of the time since a severe fall at the age of 11 years. Some bladder frequency and burning at times. Has had hemorrhoids which are rarely painful and ever bleed. Several previous attacks similar to the present one, the first about one year ago.

Family History: One sister has had a goitre which has been removed. No history of tuberculosis or cancer in the family. Mother and father, one brother and two sisters living and well.

Physical Examination: Nothing remarkable except a very sharply localized point of tenderness over McBurney's point and persistently in exactly the same location. No abdominal masses; Pelvic examination negative. Leukocyte count, 17,300; differential leukocyte count, small lymphocytes, 21 per cent; large lymphocytes, 1 per cent; large mononuclears, 9 per cent; polymorphonuclear neutrophils 67 per cent (40 immature forms); polymorphonuclear basophils 2 per cent. No malaria found. Wassermann and Kahn tests negative. Urine not remarkable. Roentgen-ray examination of the pelvis and lumbar and dorsal spine, anterior posterior and lateral, negative.

Operation: McBurney incision; appendix in retrocecal position but easily delivered with cecum and gentle traction on base of appendix. If appendix was adherent, it was very slightly so; no dense adhesions. The distal $2/3$ of the appendix was very hard and thickened with marked scarring and white solid areas showing through the peritoneal covering; appeared to be tubercles or caseous areas in the wall. Diagnosis at operation was probably tuberculosis. Mesentery and the area around where appendix was located were searched for glands or other pathology and none were evident. Right tube and ovary picked up and inspected and found normal. Wound was closed without drainage. Patient made an uneventful recovery.

Microscopic examination of appendix showed adeno-carcinoma (group III).

Abstract: Liver Abscess.—Dr. A. Street.

Patient: White male, aged 47 years, carpenter. Admitted to hospital March 30, 1930.

Chief Complaint: General aching, fever, nausea, anorexia and cough without expectoration; onset three days previously.

Previous History: Not remarkable except for attack of bloody diarrhea one month ago, lasting for ten days. The patient has resided in the United States all of his life.

Family History: Not remarkable.

Examination: Thorax shows dullness, bronchial breathing and moist rales at right base posteriorly. No other remarkable findings. Leukocyte count 22,000; neutrophils, 85 per cent; urine not remarkable.

Course: Temperature 99°F. to 102°F. for one week. Then had sudden right upper quadrant pain, followed by tympanites, extreme weakness, rapid pulse and evidence of severe shock. Abdominal rigidity and tenderness, most marked in the right upper quadrant. The picture was that of acute peritonitis. As patient was in no condition for exploratory operation, palliative treatment was given,—ice to abdomen, turpentine stupes, colon irrigations for tympanites, no food by mouth, stomach kept empty with Jutte tube, and glucose intravenously.

Condition gradually improved and on March 24 there was tenderness and slight edema of lower right lateral chest. Exploratory needle introduced into the eighth interspace yielded chocolate colored thick pus. A trocar was introduced into this abscess through the same space and a pezzar catheter was introduced through the canula.

The abscess contained about one quart of chocolate colored pus. Ten cc. of Dakin solution were injected every three hours through the catheter. One grain of emetine was given intramuscularly each day for seven days.

Improvement was prompt and has continued. The patient now has no symptoms and the cavity is down to a capacity of one ounce. The temperature has been normal since March 28.

The chocolate colored fluid was sterile and no amebae could be found in it. However, in view of the history and absence of bacteria from the abscess contents, the diagnosis of amebic abscess seems justifiable.

CHAMBERLAIN-RICE HOSPITAL.

Dr. J. G. Logan reports for the Staff of the Chamberlain-Rice Hospital, Natchez, at its April Staff Meeting. Interesting cases:

1. White female, aged 8 years. Extensive cranial fracture. One linear fracture from ver-

tex to right orbit; another from occipital region to right temporal region. Hemorrhage from right ear and nose. Marked evidence of intracranial pressure. Trephine and decompression over right temporal area under amytal anesthesia. Uneventful recovery.—J. C. Rice, M. D.

2. White female, aged 25 years. Marked pulmonary tuberculosis. History of recurrent left kidney colic for past several years. Severe left kidney colic for five days prior to admission. Roentgen-ray revealed a large stone in the pelvis of the left kidney. Ureteral catheterization showed good function of both kidneys and no evidence of tuberculosis of the kidney. Under amytal anaesthesia, nephrolithotomy was done and convalescence was uneventful. Patient has since entered the Mississippi State Sanatorium for pulmonary treatment.—J. F. Chamberlain, M. D.

3. Mr. C. W., aged 49 years, white, presented himself for diagnosis on account of difficult breathing and loss of weight.

Past History—Patient had enjoyed good health up until about eight years ago when he awoke one morning and found that he had lost his voice. He suffered no pain and dyspnea at that time. He reports that he consulted a physician who prescribed for him and advised him that it was a paralysis of the vocal cord. He later consulted another specialist who advised him that it was in all probability due to a luetic process of many years standing. He states that he has continued about the same until six weeks before admission to the hospital when he almost died from trying to repress a cough in church. He states at that time he was breathless for some time. He has lost twenty-five to thirty pounds in weight.

Family History—Essentially negative.

Present History—He says that he came to the hospital on account of the fear that he would die unless something was done.

Physical Examination—Patient is an adult white male apparently fifty years of age, suffering with considerable dyspnea and unable to speak above a whisper. General physical and laboratory findings were essentially negative. The mouth showed no teeth present and a hypersensitive throat and pharyngeal reflex. Under a local anesthetic and with the aid of the directoscope a section of the tumor mass extending up between the vocal cords was removed for laboratory diagnosis. The laboratory report was that the growth was benign. This was done on March 31, 1930. On April 2, a preliminary tracheotomy was done to relieve the dyspnea. On April 4, the tumor was removed by means of a laryngo-fissure and the pedicle was

fulgurated with diathermy. There was no packing and on April 6 the tracheotomy tube was removed and the wound packed with gauze. Patient thus far has enjoyed an uneventful recovery. The gross pathological findings were those of a large benign papilloma.—Raymond T. Smith, M. D.

TRANSACTIONS OF THE CHARITY HOSPITAL SURGICAL STAFF.

The regular monthly meeting of the Staff was held on March 19, 1930.

Dr. Reginald A. Cutting presented a most interesting illustrated lecture on acidosis and alkalosis. Although his time was limited, he carefully explained the important points of each, and the importance of making a differential diagnosis, admitting that it was almost impossible to make a diagnosis clinically, and that blood chemistry was needed to differentiate. He also stated that insulin should not be used when administering glucose intravenously, because, theoretically at least, it seemed to be against certain physiological principles.

In discussing Dr. Cutting's remarks, Dr. E. L. King explained that at present there exists two schools in regard to this matter. One believes that insulin should not be given when glucose is administered, and the other believes that insulin

is a necessary adjunct when glucose is given intravenously. In his own experience he pointed out that with cases of pernicious vomiting due to pregnancy, marked improvement was apparent when insulin was used with glucose intravenously, in contrast to only a slight improvement when insulin was not used with the intravenous glucose.

The next presentation was a brief discussion on the use of stock vaccines in the treatment of carbuncles by Dr. Shirley Lyons. Dr. Lyons presented a resumé of thirty cases treated by him, which were all benefited, and the period of disability shortened to an average of eighteen days. This presentation was thoroughly discussed by Drs. A. C. King, H. B. Gessner, F. L. Cato, and James Rives. It was brought out that the initial dose, as well as the subsequent doses, were to be very large if any benefit was to be derived.

The next matter of interest was the presentation of surgical deaths. The first case was that of a colored female who died from an extensive carcinoma of the cervix. The discussion which followed concentrated on whether or not radium should be used in very advanced cases of this type. The second case was that of a young negro male, 12 years of age, who died of an extensive lymphosarcomatous growth involving the intestines and mesentery, with metastatic foci in the liver and lungs.

FRANK L. LORIA, M. D.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY.

CALENDAR.

May 2—Pathological Conference, Hotel Dieu, 10-11 A. M.
May 2—Physiology Seminar, Tulane University, 5 P. M.
May 5—Eye, Ear, Nose and Throat Hospital Staff, 8 P. M.
May 9—Pathological Conference, Hotel Dieu, 10-11 A. M.
May 9—Physiology Seminar, Tulane University, 5 P. M.
May 9—French Hospital Staff, 8 P. M.
May 9—Medical Reserve Corps Branch School, 8 P. M.
May 12—Orleans Parish Medical Society, 8 P. M.

May 13—Baptist Hospital Staff, 8 P. M.
May 14—Touro Infirmary Staff, 8 P. M.
May 15—I. C. R. R. Hospital Staff, 12 N.
May 15—Eye, Ear, Nose and Throat Club, 8 P. M.
May 16—Pathological Conference, Hotel Dieu, 10-11 A. M.
May 16—Physiology Seminar, Tulane University, 5 P. M.
May 19—Hotel Dieu Staff, 8 P. M.
May 20—Charity Hospital Medical Staff, Jung Hotel, 12 Noon.
May 21—Charity Hospital Surgical Staff, 8 P. M.
May 23—Pathological Conference, Hotel Dieu, 10-11 A. M.
May 26—Orleans Parish Medical Society, 8 P. M.
May 30—Pathological Conference, Hotel Dieu, 10-11 A. M.

During the month of April the Society held one meeting. The regular quarterly executive meeting scheduled for April 14 was postponed to be held jointly with the special meeting on Saturday, April 19.

Dr. Charles L. Scudder, of Boston, Chairman of the Committee on Fractures of the American College of Surgeons, was the guest of the Society at the special meeting held Saturday, April 19. Dr. Scudder gave a very interesting talk on Industry and Fractures. Because of the season of the year this meeting was very poorly attended.

The regular meeting scheduled for April 28 was dispensed with because of confliction with the meeting of the Louisiana State Medical Society in Shreveport.

A special meeting of the Board of Directors was called on March 31 to consider the proposed drive for the Flint-Goodridge Hospital and Medical Center. At this meeting the following resolution was adopted:

"Recognizing the importance to the Community of such a health center and hospital for Negroes as is proposed in connection with the merger from which is to arise Dillard University, and a new Flint-Goodridge Hospital,

Be it resolved, That the Orleans Parish Medical Society heartily approves and endorses this project, and the campaign to collect the necessary funds to bring it to realization.

Be it further resolved, That a copy of this resolution be transmitted to the Committee in charge of the Flint-Goodridge Campaign."

Dr. Aaron J. White was elected to Active Membership.

We regret to learn of the resignation of Dr. Gayle Aiken.

The History being written by Dr. Fossier is finished. The members having their pictures in this book are requested to send in their checks to defray the expense of photo-engraving and the cost of the History.

TREASURER'S REPORT.

Actual Book Balance, Feb. 28, 1930.....	\$3,004.21
Receipts	\$3,214.50
	<hr/>
	\$6,218.71
Expenditures	\$2,507.94
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Actual Book Balance: March 31, 1930....\$3,710.77

LIBRARIAN'S REPORT.

During March, 1930, 104 books have been added to the Library. Of these 44 were received by binding, 18 from the New Orleans Medical and Surgical Journal, 2 by purchase and 40 by gift. New titles of recent date are listed below.

The library is called upon more and more, to furnish material and information for particular cases in practice. We feel that this is the most worthy purpose of our medical library, and every effort is made to furnish the best articles and texts on the various subjects.

We have interested a young lady, recommended by Newcomb Art School in medical drawing, with the idea of having someone to whom we could refer doctors needing work of this kind. Another young lady has interested herself, at Miss Marshall's suggestion, in assisting doctors in the writing of medical papers. Both are doing most satisfactory work. Where translations are needed we refer the physicians to translators. In every way we try to make the information desired, available.

NEW BOOKS—MARCH.

- Meagher—Study of Masturbation. 1929.
- Harper—Clinical Obstetrics. 1930.
- Pool—Surgery at the New York Hospital. 1930.
- Christian—Physiology for Nurses. 1929.
- Collins—Insomnia and How to Combat It. 1930.
- Crooks—Aids to Orthopedic Surgery. 1929.
- Pearce—Orthopedic Nursing. 1930.
- McCollum—Newer Knowledge of Nutrition. 1929.
- Horsley—Research and Medical Progress. 1929.
- Rhinehart—Roentgenological Technique. 1930.
- Schafer—Essentials of Histology. 1929.
- Nissen—Practical Massage. 1929.
- Campbell—Orthopedic Surgery. 1930.
- Piney—Clinical Atlas of Blood Diseases. 1930.
- Wright—Applied physiology. 1929.
- Fakata—Funktion der weiblichen Geschlechtsorgane. 1930.
- Weinmann—Law Concerning Dead Bodies. 1929.
- Pusey—Medicine as a Career. 1930.

H. THEODORE SIMON, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

REGIONAL CONFERENCE ON SOCIAL HYGIENE.

The Southern States Regional Conference and Social Hygiene Institute will be held in New Orleans, May 23-27, under the auspices of the Louisiana State Board of Health and the New Orleans Council of Social Agencies. It is expected that health officers, physicians, public health and clinic and school nurses, educators, social workers, parents, club women, church leaders and others interested in social hygiene will be in attendance.

May 23-24 round table discussions of technical social hygiene problems have been arranged. There will be two groups—one for doctors, nurses and social workers primarily interested in the medical aspects of social hygiene; such problems as the treatment of syphilis in pregnancy, the management and control of clinics and social case work will be considered. The second group, composed of educators, Parent Teachers Association workers, clubs and church leaders, and others interested in the educational aspects of social hygiene, will discuss such problems as the method and material of sex education, child questions and their answers, the part of religious workers in sex education.

On Sunday, May 25, two meetings, one of which has been especially arranged to bring together Negro leaders, have been arranged for the general public.

The Regional Conference proper will open on the morning of May 26 and will continue through the next day. The program will include addresses by national hygiene authorities on the subject:

"The Cost of Syphilis in Life and Wealth."

"What Social Hygiene Means to the Community."

"The Protection of Youth from Moral Hazards."

"Congenital Syphilis Can and Must Be Prevented."

"The Part of the Nurse in Social Hygiene."

"Clinics for Venereal Diseases. Why We Need Them. How to Run Them."

"The Parent and Sex Instruction of Children."

Among the speakers will be Dr. Lloyd Thompson, Father Alphonse Schwitalla, Dr. O. C. Wenger, Dr. James R. McCord, Dr. E. L. Swan, Dr. Walter Clarke, Miss Edna Moore and Miss Henrietta Additon.

AMERICAN SOCIAL HYGIENE
ASSOCIATION,

370 Seventh Avenue, New York, N. Y.

INVITATION TO CONFERENCE ON SOCIAL HYGIENE.

A copy of a letter sent to the physicians of New Orleans is published below. This same invitation is extended to the physicians of Mississippi and Louisiana. Only the cost of sending so many letters has prevented the sending out of individual invitations throughout the two states.

American Social Hygiene Headquarters,
302 Audubon Building.

Dear Dr. Blank,

You are cordially invited to attend the Southern States Social Hygiene Conference, May 26-17, to be held at the Jung Hotel, under the joint auspices of the Louisiana State Board of Health and the Central Council of Social Agencies.

At this Conference, a distinguished list of speakers from out of town will be on the program. I feel that of particular interest to the physicians of New Orleans will be the special institutes held the evenings of May 23 and 24 at 7:45 P. M., at the Jung Hotel. These are closed meetings, open to certain small groups only, requiring a registration fee of \$2.00, and are limited to one hundred participants.

Group 2 of the institute is arranged primarily for doctors. The first night the meeting will be led by Dr. James R. McCord and will deal with the prevention of congenital syphilis. Dr. McCord, Professor of Obstetrics, at Emory University, is a special representative of the U. S. Children's Bureau and has been engaged in a study of this subject under the auspices of the Rockefeller Foundation. The next evening's program will be conducted by Dr. O. C. Wenger, U. S. Public Health Service, and will take up the subject of clinics for the treatment of syphilis and gonococcal infections. Dr. Wenger is now demonstrating a model clinic under the direction of the U. S. Public Health Service. Dr. Walter Clarke, Medical Director of the American Social Hygiene Association, will also participate in this program.

A registration blank is enclosed which you are requested to fill out and return at your earliest convenience to American Social Hygiene Headquarters, 302 Audubon Building, New Orleans.

ST. TAMMANY PARISH MEDICAL SOCIETY.

The monthly meeting of the Society was held Friday evening, April 4, in Slidell, with the following physicians present: Doctors Gautreaux, Griffith, Singleton, Polk, Bulloch, Lawrence, Young, Paine, Roland Young Maylie, F. F. Young

and Dr. I. I. Lemann of New Orleans, invited guest.

Dr. Lemann was asked to address the meeting and delighted all present with an able discourse on "Angina and coronary occlusion." Dr. Lemann in his usual able manner, brought out all the late points of interest in connection with the condition, recited numerous cases that he had dealt with, that presented one or more of these features, making his talk very comprehensive. Dr. Lemann was given a standing vote of thanks for his instructive paper.

In response to a communication from Dr. P. T. Talbot, calling our attention to the action taken by the Rapides Parish Medical Society in reference to the Porter Bills, now pending in our National Congress, the society joined hands with the Rapides Parish Society in opposing said bills, and the Secretary was instructed to communicate with our Representatives in Congress appraising them of our opposition to said bills.

The Society had a lengthy round-table discussion of topics of the day, in general, then adjourned to meet next month in Mandeville.

H. D. BULLOCH, M. D.,
Secretary and Treasurer.

MEETING OF THE BI-PARISH MEDICAL SOCIETY.

The East and West Feliciana Bi-Parish Medical Society met in the East Louisiana State Hospital as the guest of Dr. Glenn J. Smith and staff. The Society instructed our Senators and Representatives in Congress to vote against and use their influence against the Porter Bills.

Drs. P. H. Jones, Jr., Cecil Lorio and O. H. Waltrip read instructive papers.

Members present were Drs. Smith, Waltrip, Miller, P. H. Jones, Sr., P. H. Jones, Jr., Cecil Lorio, L. F. Lorio, Williams, Sewell, Pittman, Lea, Rombard, Stenley, Fossae, Morgan, Shaw, Morris, Hargrove, McCaa, Cook, Irwin and Toler.

E. M. TOLER, M. D.,
Secretary-Treasurer.

FIFTEENTH ANNUAL CLINICAL SESSION OF THE AMERICAN COLLEGE OF PHYSICIANS.

The American College of Physicians will hold its Fifteenth Annual Clinical Session at Baltimore, Maryland, from March 23-27, inclusive, 1931. The Lord Baltimore Hotel will be headquarters.

Dr. Sidney R. Miller, Baltimore, as President, will have charge of the selection of the general scientific program. Dr. Maurice C. Pincoffs, of Baltimore, has been appointed by the Board of Regents as the General Chairman of the Session, and will make all local arrangements, including the making up of the program of clinics. Business details will be handled by the Executive Secretary, Mr. E. R. Loveland, from the College headquarters, 133-135 S. 36th Street, Philadelphia, Pa.

The attention of secretaries of various societies is called to the above dates, in the hope that their societies will select non-conflicting dates for their 1931 meetings.

NEWS AND COMMENT.

Dr. H. W. E. Walther, of New Orleans, addressed the Tri-State Medical Association, at Marshall, Texas, on March 21, 1930, his subject being: "The verumontanum in its relation to certain obscure sexual and urinary disturbances in the male."

Dr. H. Daspit, Dean of Graduate School of Medicine of the Tulane University of Louisiana, was a guest of the Ouachita Medical Society on Wednesday, April 16, 1930, at a special meeting held at Monroe, La., and addressed the group on "Paralyses resulting from jamaica ginger."

Assistant Surgeon General R. C. Williams, U. S. P. H. S., has been directed to proceed from Washington, D. C., to points in Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Kansas, and return, for the purpose of conferring with State and local health authorities relative to the reporting of measures for the prevention of smallpox and typhoid fever.

Dr. Lucien LeDoux was a guest of the Third District Medical Society at their last meeting. He read a paper on "The relationship of emotionalism to ovarian disturbances."

Beginning this year the American Association for the Study of Goitre will award a cash prize of \$300 annually for the best original thesis dealing with some phase of the goiter problem. Theses should be submitted by June 1, to Dr. Walter M. Simpson, Chairman of the Essay Committee, Miami Valley Hospital, Dayton, Ohio. The award will be given immediately following the coming meeting of the Association which is to be held in Seattle, Washington, July 10-12, 1930.

CORRESPONDENCE.

Editor,

New Orleans Medical and Surgical Journal.

My Dear Sir:

I would appreciate your inserting a notice warning physicians and surgeons to guard carefully their prescription blanks. Recently several blanks were stolen from a desk in the waiting room of my office, presumably by a narcotic addict. He has endeavored to have filled rather crude prescriptions for morphine, which are written on these blanks and he may have succeeded in some instances. Several druggists have detected the forgeries and have refused, after telephoning me, to fill the prescriptions.

The moral is keep all prescription blanks carefully put away where unauthorized persons cannot get at them.

Yours truly,

March 31, 1930.

E. L. KING.

NATIONAL HOSPITAL DAY.

National Hospital Day is now annually celebrated by thousands of hospitals in Canada and the United States, as well as other lands, because it provides the means of directing public attention to the great work which these institutions do in the humanitarian cause. The movement originated eight years ago and was an expression of the widely growing feeling that communities were not only entitled to information about hospital endeavor, but should in their turn afford more definite support to these projects which contribute to the health and happiness of citizens in general. The hospital today functions as a most important and essential utility and is closely related to the program of public health activities.

The particular object of the National Hospital Day movement is to encourage the public to visit a hospital on May 12 so that all may become acquainted with the methods of conducting these institutions, their causative, custodial, educational and research activities, and by so doing to dispel the old time fear of the hospital and to compel the conviction that it is the proper place to come to when one is ill.

THIRD GRADUATE FORTNIGHT.

The Third Annual Graduate Fortnight of the New York Academy of Medicine will be held from October 20-31, 1930. The general subject which has been chosen for this year is "Medical and surgical aspects of acute bacterial infections."

The program as arranged is in two parts—co-

ordinated afternoon clinics to be held in ten important hospitals of the city, and evening meetings to be held at the Academy. An added feature of this year's Fortnight will be an exhibit of anatomical, bacteriological and pathological specimens and research material bearing upon the various aspects of the subject. Each of the hospitals co-operating in the Fortnight will present two afternoon clinical programs dealing with different phases of the general subject.

The program for the evening meetings to be held at the Academy includes discussion of:

- Focal infections as a cause of disease.
- Osteomyelitis and acute joint infections.
- Acute infections of the genito-urinary tract.
- Infections arising from tonsils and sinuses.
- Infections of the middle ear.
- Acute infections of the face and oral cavity.
- Operative risks from infection.
- Appendicitis.
- Bacteremia.
- Suppuration of lung and pleura.
- Acute infections of the gall-bladder and biliary tract.
- Infections of the skin and subcutaneous tissue.
- Acute infections of the upper respiratory tract including influenza.
- The pneumonias and other pneumococcus infections.
- Bacteriophage as a treatment in medical and surgical acute bacterial infections.
- Puerperal sepsis.
- Immunity—general and local.
- Serum therapy.
- Vaccine and non-specific protein therapy.
- Rheumatic fever.
- Acute and sub-acute bacterial endocarditis.
- Meningococcus infections including meningitis.

The list of speakers who have been invited to take part in the Fortnight includes prominent clinicians from many parts of the country who are recognized by authorities in their special lines of work. The profession generally is invited to attend. No fees will be charged for attendance at any of the clinics or meetings on the program. A complete program and registration blank for special clinics and demonstrations will be mailed on request. Write N. Y. Academy of Medicine, Fifth Avenue and 103rd St., New York.

RESOLUTIONS ON THE DEATH OF
DR. MERRILL.

Whereas, Dr. Herman P. Merrill has been a member of the Bi-Parish Medical Society; and,

Whereas, Dr. Merrill has been respected and honored by all the members of this Society, and by all others who knew him, as a man of the highest moral and professional character; and,

Whereas, on Christmas morning, December 25, 1929, without warning, God in His almighty wisdom saw fit to take him from our midst;

Therefore, be it resolved, That by the death of Dr. Merrill the Bi-Parish Medical Society has suffered the loss of one of its most honored and beloved members, and offer their heartfelt sympathy to the surviving members of his family.

Be it further resolved, That a copy of this resolution be incorporated in the minutes of this

Society, and a copy sent to the family of the deceased, and Secretary of Louisiana Medical Society.

J. W. LEA, M. D.,
C. S. MILLER, M. D.
O. H. WALTRIP, M. D.

PARISH MEDICAL SOCIETY OFFICERS.

The following Parish Medical Societies have elected officers for 1930:

Acadia Parish: President, Dr. A. R. Morgan, Crowley; Vice-President, Dr. L. L. Kahn, Rayne; Secretary-Treasurer, Dr. S. R. Henry, Crowley; Delegate, Dr. J. W. Faulk, Crowley; Alternate, Dr. J. D. Hunter, Rayne.

Bossier Parish: President, Dr. J. B. Hall, Alden Bridge; Secretary-Treasurer, Dr. C. M. Tucker, Haughton; Delegate, Dr. C. M. Tucker, Haughton; Alternate, Dr. J. B. Hall, Alden Bridge.

METAPHEN AS GERMICIDE AND SKIN DISINFECTANT—George W. Raiziss, Marie Seve-

rac and J. C. Moetsch, Philadelphia, report on the results of an extensive study of metaphen and many other antiseptics in blood serum and skin disinfection. The technic used to study the skin disinfection is in principle the same as that of Roberts, with certain modifications. They contend that only an antiseptic which passes the most rigid test is to be considered safe for use in all clinical cases in which a germicide is to be applied. They conclude, therefore, that, considered from this point of view, ethyl alcohol, which is used extensively, is disqualified as a skin disinfectant. A solution of hexylresorcinol 1:1,000 (S. T. 37) gave growths of bacteria in all tests. Acriflavine base was found to be efficient in 2 per cent concentration, resulting in sterilization in 80 per cent

of cases. It is important to note that a 5 per cent solution of iodine is ineffective and a 7 per cent is effective in 88 per cent of cases. Two per cent mercurochrome-alcohol-acetone-water solution showed only 79 per cent efficiency. An aqueous solution of metaphen 1:2,500, or 0.04, produced sterilization in all of the fifty tests performed. Metaphen proved to be efficient in very high dilutions. Thus a 1:2,500 dilution of it, or 0.04 per cent, was found to produce 100 per cent sterilization, while 7 per cent iodine and 2 per cent mercurochrome sterilized at five minute intervals to the extent of 70 per cent and 50 per cent, respectively. This indicates that better results were obtained with metaphen in dilutions 175 and fifty times greater than those employed for iodine and mercurochrome, respectively.—J. A. M. A., April 19, 1930.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

L. S. Lippincott, M. D., Associate Editor

VICKSBURG, MISSISSIPPI.

LOCATION.

Vicksburg, Mississippi, located on the western border of the State of Mississippi, and approximately half way between the northern and southern boundary of the State, is built on the high bluffs and slopes overlooking the Mississippi and Yazoo Rivers which form the western boundary of the State.

The city, itself, is topographically and architecturally picturesque, and in common with Southern cities of ante-bellum days, exhibits a delightful blending of the old regime with the improvements of the present. It contains the largest and one of the most beautiful park-like National Centeries, and what is the greatest attraction of all, the Vicksburg National Park.

HISTORY.

Vicksburg was established in 1791 by the Spaniards as Fort Nogales. It was later chartered as the city of Vicksburg in 1825. In 1861, when the flames of war spread over the country, Vicksburg was recognized by both the Federals and Confederates as an extremely advantageous point. Of such importance was the city of Vicksburg to both the North and South that General Grant said: "When Vicksburg fell, the fate of the Confederacy was sealed."

After the Civil War and during the reconstruction Vicksburg also played an important part, and rapidly grew to be one of the most important points along the entire Mississippi River.

VICKSBURG NATIONAL MILITARY PARK.

This park, constructed by the United States Government, is in commemoration of the campaign, siege and defense of Vicksburg, which campaign, siege and defense extended over a period from March 20 to July 4, 1863.

The general plan and scope of the park is such that it is intensely interesting and instructive place to visit. It contains 1323 acres, and practically includes the battle lines of the two opposing armies during the investment of Vicksburg and all the fighting ground, between them. The park is traversed by thirty-two miles of graveled roadways. The park contains 897 tablets, in appropriate locations, 128 mounted guns, and 468 memorials, monuments and markets.

THE NATIONAL CEMETERY.

The National Cemetery at Vicksburg, fronting the river and blending into the northern end of

the Military Park, although none of it, was established in 1865. This is one of the most magnificent cemeteries ever dedicated to the interment of the dead soldiers of any nation. It contains the graves of 16,22 Union soldiers, who lost their lives in and around Vicksburg during the Civil War.

The cemetery is a remarkable piece of landscape engineering with delightful walks and drives, with ravines, terraces and plateaus, and with long avenues of trees, most Spanish oaks and magnolias, supplemented with tropical plants and flowers.

NATIONAL PARK GOLF CLUB.

The beautiful links of the eighteen-hole National Park Golf Club are available to visiting golfers. This golf course is one of the finest in the entire Southland and its rugged, natural hazards make the playing of this course a real joy to the golf devotee.

EXCELLENT FISHING.

Numerous lakes, the largest of which is Eagle Lake, offer the sportsman every opportunity to enjoy a morning's fishing. The size and game-ness of the famous "Eagle Lake large mouth black bass" is known the country over. A visit to Vicksburg is not complete for the sportsman without a side trip to Eagle Lake.

BRIDGE ACROSS THE MISSISSIPPI RIVER.

One of the most interesting side trips, will be the one to the site of the new seven million dollar (\$7,000,000.00) combination highway and rail bridge across the Mississippi River. This immense structure has been recently completed and open to traffic and is the only bridge across the river south of Memphis, Tennessee.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Dr. T. M. Dye, Secretary of the Mississippi State Medical Association, has announced the preliminary program for the meeting of the Association in Vicksburg on May 13, 14, and 15, as given below. This program is subject to some changes:

GENERAL MEETING.

First Day.

Tuesday, May 13, 1930.

Sessions: 9:30 A. M. to 12 M.; 1:30 P. M. to 6:00 P. M.

Auditorium—Y. M. C. A. Building.

OPENING EXERCISES.

1. Call to order. President H. A. Gamble, Greenville.
2. Invocation. Rabbi Sol Kory, Vicksburg.
3. Report of Committee on Arrangements.

SECTION ON SURGERY.

H. R. Shands, Chairman, Jackson

1. Treatment of Acute Peritonitis. R. D. Kirk, Jr., Tupelo.
2. Amytal as an Anesthetic. C. T. Chamberlain, Natchez.
3. Controllable Spinal Anesthesia. J. C. Culley, Oxford.
4. Surgical Mortality: Its Interest to the General Practitioner. William Bartlett, St. Louis.
5. Plastic Surgery About the Orbit. A. G. Wilde, Jackson.
6. Carcinoma of the Rectum. W. E. Sistrunk, Dallas, Texas.
7. Carcinoma of the Stomach. A. Street, Vicksburg.
8. Fracture of the Femur. F. H. Hagaman, Jackson.
9. The Diagnosis and Treatment of Ruptured Duodenal Ulcer. Gilruth Darrington, Yazoo City.

EVENING SESSION.

Eight O'Clock

Tuesday, May 13, 1930.

Auditorium—Y. M. C. A. Building.

To which the Public is Cordially Invited.

1. Invocation. Rev. Gordon M. Reese, Vicksburg.
2. Addresses of Welcome—
On Behalf of the City of Vicksburg. Mayor W. J. Hossley.
On Behalf of Issaquena-Sharkey-Warren Medical Society, Laurence J. Clark, Vicksburg.
3. Response to Addresses of Welcome. R. Curtis Smith, Drew.
4. Annual Oration. J. Shelton Horsley, Richmond, Va.
5. President's Address. H. A. Gamble, Greenville.

Wednesday, May 14

9 A. M.

Section on Eye, Ear, Nose and Throat

C. A. McWilliams, Chairman, Gulfport

Chairman's Address, C. A. William, Gulfport.

1. Headache of Nasal Origin. H. R. Fairfax, Brookhaven.
2. Corneal Ulcers. W. L. Hughes, Jackson.
3. Tonsillectomy Hemorrhages. E. F. Howard, Vicksburg.
4. Protein Therapy in Ophthalmology. A. G. Wilde, Jackson.
5. Enucleation of the Eye with Glass Ball Implantation. E. C. Ellett, Memphis.
6. Some Observations on Sinus Diseases in Children. R. C. Lynch, New Orleans.
7. Gross and Microscopic Pathology in Chronic Maxillary Sinus Disease. Robin Harris, Jackson.
8. The Common Cold in Ear, Nose and Throat Practice. D. W. Hamrick, Corinth.

SECTION ON PUBLIC HEALTH AND
HYGIENE.

Hardie R. Hays, Chairman, Jackson

1. The Control of Venereal Diseases in Mississippi With Competent Treatment by the General Practitioner. Hardie R. Hays, Jackson.
2. Flocculation Test for Syphilis; Its Value. T. W. Kemmerer, Jackson.
3. Undulant Fever. H. E. Hasseltine, U. S. Army.
4. Snake Bite. Dudley Jackson, San Antonio.
5. Hookworm Disease and Infestation. Mr. C. A. Parmalee, Jackson.
6. Full Time Health Work in Mississippi. Felix I. Underwood, Jackson.

Wednesday, May 14

3:00 P. M.

SECTION ON RADIOLOGY.

C. C. Hightower, Chairman, Hattiesburg

1. The Roentgen Diagnosis of Pulmonary Tuberculosis with Especial Reference to Pathological Classification. Geo. P. Sims, Gulfport.

2. An Interesting Study in Roentgen Ray From Memory's Storehouse. H. G. McCormick, Laurel.
3. Roentgen Ray Diagnosis in Gall Bladder Disease. Geo. M. Street, Vicksburg.
4. Duodenal Ulcer in Childhood. W. F. Henderson, New Orleans.

Wednesday, May 14

2:00 P. M.

G. Y. Gillespie, Jr., Chairman, Greenwood

1. Precordial Pain. L. J. Clark, Vicksburg.
2. Upper Left Abdominal Tumor Mass in Children, and Some Points in Differential Diagnosis. S. L. Brister, Jr., Greenwood.
3. The Cardiac and Other Disabilities of Advancing Years. Jas. S. McLester, Birmingham.
4. Paranasal Sinus Disease in Children. J. D. Simmons, Gunnison.
5. Colitis. C. W. Patterson, Rosedale.
6. The Use of Whole Blood in Pediatric Work. N. C. Womack, Jackson.
7. Some Observations on Gastro-Intestinal Disease. J. H. Musser, New Orleans.
8. A New Foreign Protein Which May Be Used Without the Usual Reaction. J. W. Gray. Clarksdale.
9. Acidosis and Alkalosis. G. L. Arrington, Meridian.
10. Epidemic Cerebro-Spinal Meningitis. F. M. Acree, Greenville.
11. A General Consideration of the Treatment of Syphilis (Lantern Slides). T. E. Ross, Jr., Hattiesburg.

NORTH MISSISSIPPI SIX COUNTY MEDICAL SOCIETY.

A meeting of the North Mississippi Six County Medical Society was held at Oxford on April 16, beginning at 11 A. M. and continuing throughout the afternoon. The program as announced by Dr. A. H. Little, Secretary, was as follows:

1. Vomiting Problems seen in Children. Dr. Ralph Bowen, Memphis. Discussion opened by Dr. J. B. Bailey.

2. Some Remarks on Applied Anatomy. Dr. P. L. Mull, University. Discussion opened by Dr. H. O. Leonard.

3. The Relation of the Physician to his Medical Society. Dr. H. A. Gamble, Greenville.

4. Cystitis. Dr. T. A. Moore, Memphis. Discussion opened by Dr. G. A. Brown.

5. Total and Differential Leukocyte Counts in Diagnosis and Prognosis. Dr. Leon S. Lippincott, Vicksburg. Discussion opened by Dr. J. M. Anderson.

6. Osteomyelitis. Dr. J. A. K. Birchett, Jr., Vicksburg. Discussion opened by Dr. H. P. Boswell.

Lunch was served at noon and the business session of the Society followed the lunch.

STATE ASSOCIATION GOLF.

Dr. Edley H. Jones, Chairman of the Committee of the Issaquena-Sharkey-Warren Counties Medical Society on the entertainment of the Mississippi State Medical Association, has announced that all entries for the golf tournament must be turned in to the registration office by 12 o'clock noon, Tuesday, May 13, and that all score cards must be turned in at the same place by 12 o'clock, noon, Wednesday, May 14.

The tournament will be for eighteen holes and is open to all members and guests of the Association. No entrance fee will be charged. Suitable trophies will be awarded.

CENTRAL MEDICAL SOCIETY.

The regular monthly meeting of the Central Medical Society was held on March 18, with Dr. R. W. Hall, Jackson, President, presiding.

A Clinic from 7:30 to 8:00 P. M., included the following:

Dr. N. C. Womack, Jackson, presented two cases in which intracranial hemorrhage had occurred at birth. The first patient, a girl of four months, showed complete recovery with no history of illness since treatment at birth for hemorrhage. The second patient, a boy of fourteen months, showed complete recovery twenty-four hours after birth.

Dr. Ainsworth presented a case report of a patient showing jaundice following a seventh dose of neoarsphenamine, this dose being given during a rest period by a doctor unfamiliar with the case.

Dr. G. W. F. Rembert, Jackson, presented case reports of four patients with "ginger" paralysis, with history of onset and neurological findings.

For the Scientific Program following, Dr. W. R. Bethea, Memphis, read a very interesting paper on "The Observation and Treatment of Some Conditions of the Newborn." Dr. Bethea urged a routine Roentgen-ray examination of all newborn babies as a means of decreasing infant mortality; among the conditions found and successfully treated are tracheo-esophageal fistula, enlarged thymus, congenital atelectasis.

Dr. Henry Boswell, director of the State Tuberculosis Sanatorium, read a paper on "Tuberculosis in Children." This paper was a compilation of the work of the leading authorities of America and will be released to the general profession in the near future.

Dr. Frank Hagaman, Jackson, presented an excellent paper on "Tuberculosis of the Joints." He stressed the importance of holiotherapy and rest of the involved joints, using surgery only as a last resort.

This was the first quarterly meeting of the year and was one of the best in the history of the society.

JACKSON INFIRMARY.

At the regular monthly meeting of the Jackson Infirmary on March 12, Drs. P. R. Greaves, J. C. Walker, and O. Simmons were elected to membership on the staff. Dr. J. E. McDill resigned from the Roentgen-ray department to resume private practice.

DELTA MEDICAL SOCIETY.

Dr. J. W. Lucas, Moorhead, Councilor for the First District of the Mississippi State Medical Association, furnishes the following:

"The Delta Medical Society met in semi-annual session in Greenwood on April 9, with a good attendance, interesting papers and discussions. The following papers were presented:

1. Cerebro-spinal Meningitis. Dr. R. M. Donald, Moorhead. Discussed by Dr. R. E. Wilson, Greenville, and others.

2. Rectal Strictures. Dr. G. M. Owens, Shelby. Discussed by Dr. George McMaster Barnes, Belzoni, and Dr. H. A. Gamble, Greenville.

3. Acute Inversion of the Uterus. Dr. L. B. Otken, Greenwood. Discussed by Dr. J. F. Lucas, Greenville.

4. Acute Agranulocytic Angina. Dr. H. G. Rudner, Memphis. Discussed by Dr. J. J. Shea, Memphis.

"By request from the chair, Dr. H. A. Gamble, president of the State Medical Association, made a splendid speech on the 'Good of the Order.'

"Belzoni will be the host at the next semi-annual meeting of the Society.

"The banquet held at the Rose Community Building was an enjoyable occasion, attended by 125 doctors and visitors. The banquet was presided over by Dr. T. B. Holloman of Itta Bena in a fitting manner. A hearty welcome by the President of the Chamber of Commerce, H. L. DeLoach, was responded to in a pleasing manner by Dr. W. W. Lewis, President of the Society. Dr. Tracy H. Clark, Chicago, a guest of the Society, responded to 'Opportunities of the Doctor for Service to Others.' Honorable W. K. Clemens gave a splendid address on 'Service.' The Blackstone-Henmen quartet was featured in a number of entertaining songs. The occasion was a success, the pleasure ours."

A son was born to Dr. and Mrs. J. E. Furr, physician in charge of the Marks Hospital, Marks, on February 11, 1930. The name of the young man is James Edward Furr, Jr.

On January 1, 1930, the Tylertown Hospital changed ownership. Dr. O. B. Harvey moved to Hattiesburg and sold his interest in the hospital to Drs. B. L. Crawford and J. B. Davis. The hospital has been incorporated and Dr. Crawford is President and Dr. Davis, Secretary and Treasurer. The institution has been re-arranged and new equipment added.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY

The Regular monthly meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held at Vicksburg April 8, with twenty-one in

attendance. The program included the following papers and discussions:

1. The Simulation of Visceral Lesions by Neuralgia of the Nerves Supplying the Abdominal Wall.—Dr. Edwin Press Hall, Vicksburg. Discussed by Drs. J. A. K. Birchett, Jr., G. M. Street, R. H. Foster, H. H. Haralson, W. H. Scudder, A. Street, E. F. Howard, and H. A. Gamble. Dr. Hall closed.

2. My Experiences with Eclampsia in Country Practice.—Dr. H. S. Goodman, Cary.

Discussed by Drs. A. Street, H. H. Haralson, W. H. Scudder, S. W. Johnston, R. H. Foster, A. K. Barrier. Dr. Goodman closed.

The feature of the meeting was an address by Dr. Hugh A. Gamble, Greenville, President of the Mississippi State Medical Association. Dr. Gamble talked in an interesting and instructive way on the ideals, purposes, and duties of the Medical Profession and the County Medical Society to organized medicine. The address was much enjoyed by every one present.

The various committees of the society on entertainment of the State Medical Association at its meeting in Vicksburg in May reported and everything will be in readiness when the association meets.

The society endorsed and commended the work of the Mississippi State Board of Health of the County Health Department in sanitation of barber shops.

There will be no regular meeting of the Society in May because of the meeting of the State Medical Association. In June the Society will meet in Monroe in joint session with the Fifth District Medical Society.

DESOTO COUNTY MEDICAL SOCIETY.

Dr. L. L. Minor, Secretary of the Desoto County Medical Society reports as follows: "At our regular meeting on April 7, 1930, an interesting program was gone through with. A luncheon was held at the Spencer Hotel in honor of our oldest and most esteemed member, Dr. William S. Weissinger of Hernando. The doctor was a valiant soldier of the Confederacy under General N. B. Forrest. In 1868 he began in this country as a

general practitioner. He is still hale and hearty, an honor to his profession and to his country.

"Dr. J. V. Wright read an interesting paper on our group insurance plan.

"Dr. L. H. Brevura, formerly of this county, now living at Dundee, reported several interesting cases,

"Drs. A. L. Emerson, W. J. Gillespie, H. A. Stewart and W. J. Weissinger are on the program for the August meeting.

"Our youngest member, Dr. C. Whitley Emerson, is our President for the ensuing year.

"We all expect to be on hand in Vicksburg next month. Vicksburg is unsurpassed as a convention city."

Acknowledgement is made of the receipt of a reprint, "The Bridging of Osseous Defects of the Forehead, Using Metal Models as Guides for the Shaping of Cartilage Transplants," by Leslie V. Rush, M. D.; J. Hack Rush, D. D. S., M. D., and H. Lowry Rush, M. D., Meridian, Mississippi. This interesting article was published in the American Journal of Surgery in December, 1929.

Acknowledgment is made of receipt of a reprint, "Congenital Hypertrophic Pyloric Stenosis," by Dr. A. B. Harvey, Hattiesburg. This article was published in the New Orleans Medical and Surgical Journal in February, 1930.

Dr. L. B. Hudson, Hattiesburg, has announced the installation of roentgen-ray equipment and radium in his offices and laboratories at Hall Avenue and Arledge Street.

The next meeting of the North East Mississippi Medical Society will be held at Houston in June.

RUSH'S INFIRMARY.

Dr. H. Lowry Rush, Secretary of the Staff of Rush's Infirmary, reports that the regular monthly meeting of the attending and visiting staffs was held on April 4, with twenty-four members in attendance. The following scientific program was presented:

1. The Diagnosis of a Failing Heart.—Dr. T. D. Bourdeaux.

Discussed by Drs. Hart, Gully, Tatum, Rush and Robinson.

2. Urological Problems Pertaining to General Practice.—Dr. J. T. Bailey.

Discussed by Drs. Rush, Googe and Tatum.

At the conclusion of the program a plate lunch was served.

EAST MISSISSIPPI MEDICAL SOCIETY.

Dr. R. Lowry Rush, Secretary, of the East Mississippi Medical Society, reports the program for the meeting of the Society on April 10, at Meridian, as follows:

1. Acidosis.—Dr. E. L. Richardson, Louisville.
Discussion opened by Drs. T. E. Jarvis and T. E. Royals.

2. Salpingitis and When to Operate.—Dr. M. L. Flynt, Newton.

Discussion opened by Drs. C. H. Harrison, Philadelphia, and K. T. Klein, Meridian.

3. A Consideration of Eye Injuries.—Dr. C. P. Mosby, Meridian.

Discussion opened by Drs. H. L. Arnold and G. W. Bounds, Meridian.

4. Scarlet Fever.—Dr. H. F. Tatum, Meridian.
Discussion opened by Drs. J. T. Googe and T. D. Bourdeaux, Meridian.

Dr. Raymond T. Smith recently entertained Dr. Carl H. Christopher, eye, ear, nose and throat specialist of Mercy Hospital and Loyola University School of Medicine, Chicago, and Dr. John D. Claridge, assistant professor of orthopedics at Loyola, and a member of the staff of Mercy Hospital, Chicago. Dr. Smith held a clinic open to all members of the profession at the Natchez Charity Hospital for Dr. Christopher.

E. R. GORDON.

It is with much regret that we announce the death of Dr. E. R. Gordon of McComb. Dr. I. E. Stennis, Secretary of the Pike County Medical Society, furnishes the following:

"Dr. E. R. Gordon, head of the McComb Infirmary, and one of the best known physicians in South Mississippi, died at 7:30 o'clock, Tuesday morning, February 18, of heart and kidney trouble.

"Dr. Gordon was born in Amite County, Miss., fifty-two years ago, moving to McComb with his parents, Dr. and Mrs. T. J. Gordon, and becoming associated with his father in the drug business, and also in the practice of medicine. He was a leader in social and professional life in McComb, having practiced medicine 26 years.

"Dr. Gordon studied medicine at Tulane University and later at Louisville, Ky. During the World War he served as captain in the medical corps of the 42nd Division. Most of the time during the war was spent on the front, and he was gassed while in service, from which it is thought he never recovered. A great deal of his time of late years had been devoted to his Infirmary, and an addition was in course of construction, which he was not spared to see completed.

"Funeral services were conducted at the First Baptist Church, of which church he was one of the most devoted and helpful members. Services were conducted by Dr. J. W. Mayfield, his pastor; Rev. H. L. Carter, of the Central Baptist Church, with whom he served in the war; Rev. J. H. Lane and Rev. Elisha Gardner of Mars Hill, and under the auspices of the Knights Templar.

"Dr. Gordon was married about twenty-five years ago to Miss Julia Ellzey, who with a little daughter, Louise, an only sister, Miss Mae Gordon, a brother L. E. Gordon, all of McComb and two nieces, Miss Mary Gordon of McComb and Miss Nellie Gordon of New Orleans, survive him.

"Dr. Gordon was a member of the Knights Templar, American Legion, and many civic clubs in McComb. The many floral offerings attested the high esteem in which he was held."

FROM ANOTHER WHO KNEW DR. GORDON.

"It was my good fortune to know E. R. Gordon fairly well. During the early winter of 1917-18 we were at the Base Hospital at Camp Logan and, being the only Mississippians there at that time, drew close together. So when I met him next, at the meeting of the State Medical Association in Hattiesburg in 1919, it was but natural that I, who had been one of the unfortunates who stayed at home, should at once demand to know what he had done and how he had fared, and this was his story, in almost these very words: 'You know I left Logan in charge of a bunch of corps men, we went across at once and got there in time to get mixed up in the drive the Germans made to capture the Channel Ports (March, 1918). Then I was sent down into France and assigned to a machine gun battalion, and went with them through the Argonne and on into Germany with the army of occupation.'

"Short and to the point, and typically Gordon. He might have been telling of a vacation trip down on the Gulf Coast and over into Alabama, only had he been doing so, he would probably have had something to say about the scenery along the road or the places he visited.

"But I learned more about it the next day. We had been out to Camp Shelby, to the meeting the Association held there the second day, and were at the Camp Station waiting for a train back to Hattiesburg, when along came a group of young officers. I learned later that they were from some of our Western States and had just been discharged from the army at Shelby. One of them glanced in our direction and let out a yell. The others instantly followed suit, and then they came at Gordon.

"They picked him up and hugged him. They sat him down and danced around him. They passed him from one to another and patted him on the back and hugged him some more. I didn't see any of them actually kiss him, but I have no doubts they did. Then the train came along and they picked him up and put him aboard, but here came a hitch, because they all wanted to sit with him. So they compromised by turning two seats together so they could sit facing each other and took turns holding him in their laps all the way to Hattiesburg.

"But just before we left the train I caught one of them and asked what it was all about. The reply was too incoherent for me to quote verbatim, but it was about like this: 'Why, By God, Sir, that's the finest fellow that ever lived! Our battalion never would have gone through the Argonne if it hadn't been for him! You'd see him walking all day so a couple of chaps with sore feet could ride; and he'd be up half the night looking after the fellows and making them comfortable, and patching them up so they could keep on going, and when anybody was hurt he was always right there, right on the job! Why, when he got the flu in Germany and was sent back, all the battalion sat down and cried. We were just lost without him.' And the young fellow pulled out his handkerchief and openly wiped his eyes, not caring in the least that everybody around should see he was doing some more crying.

"I don't know what sort of an obituary will be written. Except for the good it will do as an example, none is needed, for he wrote it himself in the memories of those young men, and it will

stand out bold and clear whenever they think of Gordon."

Dr. Guy R. Jones, formerly house surgeon at Hotel Dieu, has accepted a position as assistant to Dr. D. E. Martin of the Martin Sanatorium, Picayune.

VICKSBURG SANITARIUM

The regular monthly meeting of the Staff of the Vicksburg Sanitarium and Crawford Street Hospital was held on April 10. Special case reports presented included:

1. Carcinoma of the Appendix.—Dr. G. M. Street.
2. Liver Abscess.—Dr. A. Street.
3. Infection of the Eye Simulating Gonorrheal Ophthalmia.—Dr. C. J. Edwards.

Dr. J. A. K. Birchett, Jr., presented a special report on the use of Spinal Anesthesia in Abdominal Surgery, and Dr. E. H. Jones a special report on the effect of Certain Drugs on the Nasal Mucosa.

Selected Radiographic Studies were shown as follows: Pulmonary Tuberculosis (2 cases); Osteomyelitis of the Femur; Cholelithiasis; Fracture-dislocation of the Neck.

The Pathologist reported for the month sixteen malignant growths as follows: Adeno-carcinoma of the Appendix (2); Adeno-carcinoma of the Breast (3); Adeno-carcinoma of the Rectum (1); Adeno-carcinoma of the Stomach (1); Adeno-carcinoma of the Uterus (1); Carcinoma of the Thyroid (1); Squamous cell carcinoma of the Cervix Uteri (4); Carcinoma of the Skin of the Face (3). Non-malignant growths for the month were reported as follows: Fibro-adenoma of the Cervix Uteri (2); Fibro-adenoma of the breast (1); Cystoma of the Ovary (7); Fibro-lipoma of legs and buttocks (1); Lipoma, subcutaneous (3); Adeno-cystoma of Penis (1); Fibro-leiomyoma of Cervix Uteri (1); Fibro-leiomyoma of Uterus (2); Fibroma of Breast (1); Fibroma of Axilla (1); Retention cyst, subcutaneous (1).

Drs. Baysinger and Crawford of Jackson were visitors.

BOOK REVIEWS

Roentgenographic Technique: By Darmon Artelle Rhinehart, A. M.-M. D. Philadelphia, Lea & Febiger. 1930. Pp. 388.

This manual is intended for physicians, students and technicians.

A very comprehensive explanation is given of the modern roentgen-ray technic, without diagnostic interpretation. It is profusely illustrated demonstrating the different positions used in making skiagrams of the human body.

About one-half of the book is taken up in describing electric apparatus, developing technic etc., and the other half is devoted to roentgen ray technic.

This book will be found useful to technicians as it contains the most modern methods used at the present time in making skiagraphic examinations.

LEON J. MENVILLE, M. D.

Clinical Atlas of Blood Diseases: By A. Piney, M. D., M. R. C. P., and Stanley Wyard, M. D., M. R. C. P. Philadelphia, P. Blakiston's Son & Co. Inc. 1930. Pp. 99.

A collection of some 36 plates illustration various types of blood disorders, with a brief synopsis of the general findings of the disease illustrated.

J. H. MUSSER, M. D.

Insomnia—How to Combat It: By Joseph Collins, M. D. New York, D. Appleton and Company. 1930. Pp. 130.

Any writings from the pen of Joseph Collins may be safely assumed to be written with charm and with delightful English of a remarkable essayist. In addition to the excellent presentation, the subject matter is lucid, sensible and equitable.

J. H. MUSSER, M. D.

Orthopedic Surgery: By Sir Robert Jones, Bart., K. B. E., C. B. and Robert W. Lovett, M. D., F. A. C. S. 2nd ed. rev. New York, William Wood and Company. 1929. Pp. 807.

All specialists in this branch of surgery as well as all interested in bone and joint surgery know of, and possibly possess a copy of the first edition of this work published in 1925 by the deans of orthopedics in this country and England.

This, the second edition, has been revised in its entirety, and to it has been added chapters on the principals of treatment of fractures at all stages; (2) a chapter on the affection of tendons, muscles and fascia; (3) a chapter on peripheral nerve lesions; (4) one on pyogenic infections of

bone; (5) one on amputations and artificial limbs. These additions, together with the revisions, makes this volume a complete, up-to-date treatise covering all conditions seen by the orthopedic surgeon.

H. THEODORE SIMON, M. D.

Essentials of Histology: By Sir Edward Schaffer. (Twelfth edition, revised by the author with the assistance of Dr. H. M. Carleton). Philadelphia, Lea & Febiger. 1929. Pp. x+628, 758. figs.

Since the first appearance of this text-book of histology and organology, in 1885, revisions have been made at fairly close intervals, the work being now available in the enlarged twelfth edition. The succession of editions in itself signifies recognized merit. The present revision contains much new material, both in text and illustrations. It sustains the well-earned reputation of the book for clear style of presentation, judgment in choice of material and abundance of instructive figures.

HAROLD CUMMINS, Ph. D.

A Textbook of Orthopedic Nursing: By Evelyn C. Pearse; foreword by Sir Robert Jones, Bart., K. B. E., C. B., F. R. C. S., and an introductory chapter by Dame Agnes Hunt, D. B. E., R. R. C. New York, G. P. Putnam's Sons. 1930. Pp. 155.

The technic of orthopedic nursing offers many difficulties to the nurse who is unfamiliar with this class of patients. Evelyn C. Pearse, with a background of many years of experience in this work has covered the field very well in her unique volume. The congenital and acquired deformities are carefully explained, with a brief outline of the treatment, and an excellent treatise on the care of the particular case make her book a valuable addition to the library of the nurse. Anatomy and function of every joint is stressed in the making of plaster bandages, the preparation of the part for operation and for the application of casts, the fitting of splints, and the care of the patient following the application of casts.

DUDLEY M. STEWART, M. D.

The Newer Knowledge of Nutrition: By E. V. McCollum, Ph. D., Sc. D. & Nina Simmonds, Sc. D. New York, Macmillan Co. 1929. Pp. 594.

This is a new edition of a standard text that has been extensively revised. The work is authoritative and exhaustive and yet brief and to the point. An excellent bibliography is attached.

I. L. ROBBINS, M. D.

Research and Medical Progress and Other Addresses By J. Shelton Horsley, M. D. St. Louis, C. V. Mosby Co. 1929. Pp. 208.

This volume is a collection of many excellent addresses that have appeared in many of the medical Journals. The author is well known and anything by him may be read with interest and profit.

I. L. ROBBINS, M. D.

Surgery at the New York Hospital One Hundred Years Ago: By Eugene H. Pool and Frank J. McGowan. New York, Paul B. Hoeber, Inc. 1930. Pp. 188.

A charming little account of surgery one hundred years ago, printed with the usual skill and artistry of Hoeber.

J. H. MUSSER, M. D.

Aids to Orthopedic Surgery: By Eric A. Crook, M. Ch. (Oxon). F. R. C. S. (Eng.). New York, Wm. Wood & Co. 1929. Pp. 232.

This is a very interesting and well written treatise which as the author says in his preface: he has endeavored to cover that part of Orthopedic Surgery which is required of the student in general surgery.

There are chapters on congenital deformities, traumatic conditions such as fractures, joint wounds, neuro-muscular injuries, etc. Also on static conditions, inflammatory conditions and new growths. The author goes into all of these things very briefly and states only the salient points in the symptoms, diagnosis and treatment.

There is a short paragraph on the ossification of the epiphyses.

The book will undoubtedly be appreciated by the general practitioner.

EDWARD S. HATCH, M. D.

A Study of Masturbation and the Psychosexual Life: By John F. W. Meagher, M. D., F. A. C. P. 2nd ed. New York, Wm. Wood & Co. 1929. Pp. 130.

A Study of Masturbation, by John F. W. Meagher, is a very brief, but comprehensive, treatise not only on masturbation in its broad sense, but on the psychology of sex and sexual development, and should be a valuable edition to the library of any one interested in these matters. Particularly people who are dealing with mental hygiene in its various fields will find it an excellent book to familiarize themselves with. Its language is simple and it is written in such a manner that the training of a specialist is not

required for its assimilation. The family physician, ministers, priests, social workers—any one, in short, coming in contact with problems of human behavior and human adjustment—should appreciate a book of this type as giving them an insight into a most important angle of their work.

E. McC. CONNELLY, M. D.

Bulletin of the National Research Council: A Survey of the Law Concerning Dead Human Bodies: By George H. Weinmann. Washington, D. C., National Research Council. 1929. Pp. 199.

A compound of the laws of different states dealing with such subjects as the "dead body;" property rights; coroners and coroners' inquests; autopsies; disposition; exhumation or disinterment. A particularly valuable summary for those who come in contact with forensic medicine.

J. H. MUSSER, M. D.

A Textbook of Physiology for Nurses: By William Gay Christian, M. D. and Charles C. Haskell, B. A., M. D. St. Louis, C. V. Mosby Company. 1929. Pp. 153.

An excellent presentation concerning the functions of the body which is very clearly written with a minimum amount of detail. Probably the only criticism that might be made is that too much space has been allotted to the nervous system and the special senses in comparison with the space allotted to other subjects.

J. H. MUSSER, M. D.

Minor Surgery: By Frederick Christopher, M. D., F. A. C. S., with a foreword by Allen B. Kanavel, M. D., F. A. C. S. Philadelphia, W. B. Saunders Co., 1929. pp. 694.

There has been a real need for a good text of minor surgery for several years and it is with real pleasure that I report its arrival.

Christopher has given us a comprehensive work with many excellent features and no serious omissions.

Diagnosis, pathology, and treatment are fully considered and in a fashion so clear and practical that the student has a good working knowledge of each subject without the necessity of referring to other books.

Surgical handicraft is admirably discussed. Practical technical suggestions are numerous and will repay any experienced surgeon for the time spent in study of the volume.

The fundamental pathology and physiology on which treatment and diagnosis are based will be found fully and clearly described.

In short this is an excellent book deserving a place in every good surgical library.

Only a disagreeable tendency to criticism prompts the reviewer to make one unfavorable comment. It is certain that the author does not use nor approve the use of the many methods of treatment detailed. A more diagnostic attitude would be better for medical students. American authors appear to have a fear of expressing definite opinions on controversial subjects that amounts almost to a vice.

J. D. RIVES, M. D.

Pathogenic Microorganisms: By William Hallock Park, M. D., Anna Wessels Williams, M. D., and Charles Krumwiede, M. D. 9th Ed., enl. and rev. Philadelphia, Lea & Febiger. 1929. pp. 819.

This book should be of great practical interest to the clinician, as well as the laboratory worker and student. An excellent volume, concise, comprehensive and unlike most books on bacteriology which are for laboratory workers only.

Inquiry in the field of bacteriology is so active at the present day that no general text-book can maintain its usefulness long without frequent revisions. It has been gratifying to note how much of the work which seemed to us particularly valuable and enlightening has emanated from American laboratories.

Experiences with active immunization against diphtheria and scarlet fever not only are the immediate practical results emphasized but, also, those observations which bear on the general problems of immunity, also to the value of certain serums and vaccines.

Many lengthy and unnecessary details having been condensed to a few paragraphs. The chapter on complement fixation has been revised. Details regarding the newer precipitation tests, especially those of Kahn, Kline and Meinike are added. Results of the use of the feeding the Calmette Vaccine to infants. However, the authors are beginning to vaccinate the older infants with small subcutaneous or intracutaneous injections, giving from one-hundredth to one-tenth milligram.

Special effort has been made to give those references which cover the essential advances during the last few years in pneumonia, measles, scarlet fever, etc.

J. L. LOCASCIO, M. D.

Otologic Surgery: By Samuel J. Kopetzky, M. D., F. A. C. S. 2d Ed., rev. New York, Paul B. Hoeber, Inc. 1929. pp. 553.

In this work Dr. Kopetzky has covered the operative surgery of the ear and the mastoid, and the operative surgery of intracranial and blood stream infections secondary to aural diseases. The text is clarified by the use of 104 well selected illustrations and 21 charts.

Dr. Kopetzky calls our attention to an interesting point when he discusses the dangers of too early incision of the ear drum. He says, "As the result of long observation it has become evident that to incise the drum too early in the course of the development of an acute suppuration of the middle ear is to add a factor toward the promotion, rather than toward the retardation, of the middle ear infection."

The volume will be found an extremely valuable reference work for the otologist.

H. KEARNEY, M. D.

PUBLICATIONS RECEIVED.

The Williams and Wilkins Company, Baltimore: *Immunity in Infectious Diseases*, by A. Besredka, authorized translation by Herbert Child, N. R. C. S. (Eng.), L. S. A.

P. Blakiston's Son & Co. Inc., Philadelphia: *Medical Gymnastics and Massage in General Practice*, by Doctor J. Arvedson, translated and edited by Mina L. Dobbie, M. D., B. Ch.

Paul B. Hoeber, Inc., New York: *Human Biology and Racial Welfare*, edited by Edmund V. Cowdry.

C. V. Mosby Company, St. Louis: *The Normal Diet*, by W. D. Sansum, M. S., M. D., F. A. C. P.

F. A. Davis Company, Philadelphia: *Normal Facts in Diagnosis*, by M. Coleman Harris, M. D. and Benjamin Finesilver, M. D. *Varicose Veins*, by H. O. McPheeters, M. D., F. A. C. S. *Trauma, Disease, Compensation*, by A. J. Fraser, M. D. *Venereal Disease*, by Hugh Wansey Bayly, M. C. *Modern Otology*, by Joseph Clarence Keeler, M. D., F. A. C. S.

Harper & Brothers, New York and London: *Uterine Tumors*, Charles C. Norris, M. D. *Cancer of the Breast*, by William Crawford White, M. D., F. A. C. S.

The Lister Medical Press, St. Louis: *The Treatment of Skin Diseases*, by Noxon Toomey, M. D., B. A., F. A. C. P.

The Oboschell Corporation, New York: *Lectures on Colonic Therapy*, by Boto Schellberg.

Gaston Dion & Cie. Paris: *Les Syndromes Ictériques*, by P. A. Carrie.

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THE RELATION EXISTING BETWEEN ORGANIZED MEDICINE AND THE PUBLIC*

H. A. GAMBLE, M. D.,

GREENVILLE, MISS.

It has occurred to me that the laity has never had a correct conception of the meaning of organized medicine in its truest sense, and I have thought that this is an opportunity to clarify in the minds of many what an organized medical profession stands for.

Quoting from Dr. William H. Welch in an address upon the fields of usefulness of the American Medical Association:

"Organized effort is a distinguishing mark of modern civilization. It is as essential for the advancement of science, of education, of social and industrial reform, of philanthropic endeavor, as for the promotion of commerce. With the remarkable progress of medical science, especially during the last three decades, man's power to control disease has been vastly increased, and the sphere of usefulness of the physician has been correspondingly widened, and with advancing knowledge will continue to expand. The skill and knowledge of the physician and sanitarian have acquired a new and ever increasing importance and significance in the movements for social amelioration, for improvement of conditions of labor and of living, for the conservation and most effi-

cient utilization of the productive energy of the world, and for the reclamation of regions now yielding no return to civilization."

Organized medicine in America is essentially altruistic and democratic in its aims; democratic in that it is truly representative of the ranks and file of the medical profession.

The unit of the organization is the country or local medical society, the membership of which is composed of physicians in every community. The state association is made up of an aggregation of these local societies; its policies are determined and it is controlled by a house of delegates elected from each of the county societies.

The American Medical Association is made up of representatives from the constituent state associations, and its policies are under the control of a house of delegates elected from each of the state associations.

The American Medical Association has divided its scope of work into a number of departments in order that the work may be done more efficiently. These departments are as follows:

Council on Medical Education and Hospitals.

Council on Pharmacy and Chemistry.
Bureau of Legal Medicine and Legislation.

Bureau of Health and Public Instruction.
Bureau of Public Investigation.

*President's Address to the Mississippi State Medical Association at the Sixty-third Annual Session, Vicksburg, May 13, 1930.

Each of these departments has a very definite work to perform.

From its inception in 1847 the American Medical Association has striven for high altruistic ideals, the education of the physician and the protection of the public. In 1904 it was reorganized and article two of its constitution and by-laws states "The objects of the association are to promote the science and art of medicine and the betterment of public health." During the twenty-five years which has elapsed since its reorganization the committee on Medical Education and Hospitals has made rapid strides toward the attainment of their ideals of medical education, and at the same time there has gone hand in hand for the past ten years an effort toward the improvement of hospitals and hospital facilities, making them better equipped for the care of the sick, and for the training and instruction of future members of the profession.

The committee on Pharmacy and Chemistry examines all the newer preparations of medicine, and when necessary analyzes preparations that are of doubtful physiological value, or whose chemical formula is not definitely known. If these newer drugs comply with all requirements as regards physiological action, potency, methods of exploitation, etc., they are accepted by the committee as being non-official but acceptable.

Naturally, in a country such as ours, where legislation affecting the practice of medicine, sanitary, and public health requirements is being constantly introduced before the various law making bodies, it is essential that the public and the profession have someone watching these various developments, so that the standards of public health, of medical education, and the practice of medicine shall never be knowingly lowered. Originally the American Medical Association was organized to elevate the standards of medical education. This has

always been one of its most important functions.

The Bureau of Health and Investigation has made and is making prolonged, persistent, and untiring efforts toward the maintaining of high standards of medical education and standards, also the education of the public as to all matters of a sanitary or medical character which maybe of public interest.

The Bureau of Investigation has done more to eliminate the patent medicine evil and to abolish quackery, than any other one organization in the history of American public life.

It is our purpose today to acquaint you with some of the workings of this organization in its efforts to elevate and maintain the high ideals and standards of medical practice, and the protection of the public from imposition and quackery. Not all has been accomplished at one fell stroke, but it has been a matter of years spent in persistent effort in the education of the public and the medical profession that has resulted in a higher standard of medical education and consequently of the practice of medicine.

With the assistance of the Association of Medical Colleges the American Medical Association has been enabled to set a standard of medical education that has practically eliminated those schools which were formerly maintained as private institutions for pecuniary profit and has elevated the practice of medicine to a higher level of scientific knowledge than ever before in the history of the country. Its efforts have been multiform. While raising the standards of medical practice, it has by education of the public, and with the co-operation of the press of the country largely eliminated the foisting of nostrums upon the laity.

Compare the advertising pages of any modern newspaper of today with the same paper of twenty-five years ago and note the marked absence of advertisements for the various patent medicines with their

specious claims of curing anything and everything from the toe ache to the headache. Behind the scenes of this improvement has been an active body of men investigating drugs prescriptions, and remedies offered to the public, and exposing by the medium of publicity those that smelled of quackery. No less so has the Council on Pharmacy and Chemistry acted as a bulwark of protection to the practitioner of medicine in the investigation of new pharmaceuticals offered for the prevention of disease. Today manufacturers of pharmaceuticals offer the products of their laboratories for the approval of this committee and enable the medical profession to know the chemical formula, physiologic action, and therapeutic indications of all preparations accepted by it. If preparations submitted to it do not come up to the standard required they are reported as non-acceptable and the reasons for their rejection given.

Do not think for one moment that this cleaning out of the muck and mire of quackery and deception has been accomplished without strong opposition, and it has only been by taking the public into its confidence and being armed with indubitable facts that the American Medical Association has been able to bring about such remarkable changes in the attitude of the purveyor of nostrums in their relations to the public.

Believing in the education of the public as a whole and that it should be kept posted as to the important facts of hygiene and sanitation and right living, the American Medical Association began the publication in 1924 of *Hygeia*. *Hygeia* is a publication non-technical in character in which various phases or problems incident to health are placed before the public in an easily comprehensible manner. It has grown steadily in favor both in schools and in the home.

So much for the activities of the parent association which as any impartial observer will have to admit have been altruistic and

idealistic in their conception and execution. These activities have been expensive. There is at present maintained at the headquarters of the American Medical Association some four hundred employees. Who has borne the brunt of this expense? The public has not been asked for a dollar. Ninety-five thousand members of the medical profession have contributed by their subscriptions to the *Journal of American Medical Association*, and the remainder of the expenses have been defrayed through the income from legitimate high-class advertisements in this *Journal*. The American Medical Association is an altruistic organization. It is not maintained from profit, nor for glory, but for the elevation of the standards of medical education, the protection of the public against imposition, and the education of the public as to the laws of health and their application in everyday life.

What as to the activities of the second division of organized medicine in the State Medical Association? I quote from the second article of the constitution and by-laws of our state association:

"The purpose of this association shall be to federate and bring into one compact organization the entire medical profession of the State of Mississippi, and to unite with similar associations in other states to form the American Medical Association with a view to the extension of medical knowledge, and to the advancement of medical science by the elevation of the standards of medical education, and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians and to guarding and fostering of their opinion in regard to the great problems of state medicine, so that the profession shall become more honorable and capable within itself, and more useful to the public in the prevention and cure of disease, and in the prolonging of the adding comfort to life."

The Mississippi State Medical Association is not simply a debating society, nor an organization for the delivery of scientific papers, although these do play an important part in the elevation of the standards of the practice of medicine. All of the benefits of public health and hygiene in the state today are directly attributable to organized medicine as represented by the Mississippi State Medical Association. The Mississippi State Board of Health is the creature of the Mississippi State Medical Association. The State Association of necessity has to assume the responsibility for this, its own child, and we feel should be accorded the credit which attains to public health activities in our state.

I quote from an address by Dr. C. C. Applewhite: "The status of the public health program in Mississippi today is due largely to the foresight, vision and zeal of the members of the State Medical Association. The progress which has been made in the field of public health must justly be credited to this association, likewise the shortcomings and failures in the public health movement must be charged to the same source. The State Board of Health is the child of this association since all of the members of that board, with one exception, are members of, and were nominated by this association.

The majority of the members of the central staff, selected by this board of your own choosing, and the medical field staff are members in good standing of this association. Thus it can be readily seen that this association, in return for the privileges accorded it by law of selecting the members of the State Board of Health, has taken unto itself the grave responsibility of promoting and leading in the matter of protecting the

public health. Public health progress can not and should not outstrip the wishes of this association. Fortunately for this state the medical profession has always led constructively in the field of public health. So long as this constructive leadership is maintained by the profession the general public will gladly follow."

No one can but say that this board, representing organized medicine justly, warrants the confidence placed in it.

Again it has always been necessary in order to maintain the highest standards of medical education and to protect the public from imposition, for organized medicine to scrutinize carefully all legislation introduced for the control of the practice of medicine. This is no selfish motive. The object of medical legislation is not for the benefit of the physician. To quote from an address by Dr. G. H. Simmons: "What is the object of organized medicine? Is it for the benefit of physicians or for the protection of the public? There is no reason why there should be any special legislation for physicians any more than for any other class of citizens, and for that matter no such legislation has ever been attempted. We have no right to, neither do we, ask the state for legislation for our sole benefit. The ultimate object must be the public good, and this fact must always be recognized by those who formulate the law?"

I bring this phase of organized medicine before you because there is never a meeting of the legislature that there is not an attempt made to lower the standards of our medical practice laws, and to let down the bars to quacks and quackery. During the present session of the legislature House Bill No. 738 was introduced as an amendment to the present law. It eliminated the

subject of Pathology altogether in a man's qualifications. A knowledge of this subject is certainly most essential to anyone who attempts to practice the healing art. Again this proposed amendment did not require even that a man should be a graduate of a medical school to come before the examining board. I doubt if but very few of my audience were cognizant of this proposed legislation. It is necessary that someone be constantly on guard for the protection of the high standards for which we have labored for years. Our state association has a committee on legislation and to keep informed as to measures which are inimical to the health and good of the community.

To come nearer home and to bring you into direct contact with your individual physician, he is a member of his county medical society, the cornerstone of organized medicine in this country. He it is to whom you turn in time of need, sickness or pestilence. He has been made much more capable, and a more scientific practitioner of medicine as a result of his affiliation with organized medicine individually, and the community as a whole has benefitted thereby. Organized medicine maintains the high ideals of Hippocrates, and is essentially altruistic in all of its actions.

It has been aptly said that, "It may be stated without fear of contradiction that the American Medical Association, with the support of its component county and district societies and its state associations has done more to raise the standards of education in our medical schools; more to further post-graduate medical work; more to promote the aims and ideals of physicians everywhere; more to awaken medical and public interest in public health matters; and more to further human health and consequently human efficiency than any other single agency in human history."

CARTILAGINOUS AND OSTEO-CARTILAGINOUS RIB GRAFTS IN THE CORRECTION OF CERTAIN DEFORMITIES OF THE NOSE.*

WALDEMAR R. METZ, M. D.,†

NEW ORLEANS.

Facial disfigurement of even moderate degree carries with it a certain social stigma that becomes a definite handicap in an individual's relation with his fellows. When such deformity approaches the unsightly and grotesque it assumes an economic angle of no negligible importance and one which merits our interest and surgical consideration. Earning capacity is curtailed, ambition and initiative are hampered, the outlook and attitude toward life are, in almost every instance, reflexed by degrees of mental depression, a complex of inferiority and a feeling of humility which robs him or her of the zest of living and the incentive to progress and improve.

The nose presenting the prominent feature of the face is most frequently exposed to trauma and its resulting deformities. Slight alterations in its normal shape and contour brings perceptible changes in facial expression and appearance. The loss of the skeletal structure of the nose by fracture, infection, disease or by surgical removal is the reason for many such deformities and the reconstruction and filling out of these resulting deficiencies, by means of autoplasmic transplant, is the surgical problem which this paper purposes to deal.

This represents constructive and reconstructive surgery and is not to be confused with the so-called "beauty surgery," such as face lifting, breast elevation and the like, with which the essayist has small sympathy and which he considers, in the main, as useless and unnecessary surgery.

*Read before the Orleans Parish Medical Society, February 25, 1929.

†From the Surgical Service, U. S. Marine Hospital.

Some fifteen years ago, plastic surgery of the nose was confined almost entirely to prosthesis with metallic substances, such as gold, silver, aluminum and steel, and those of which paraffin and gutta percha are examples. With use and experience these substances have been abandoned and relegated to the obsolete since they, in the most part, behave as foreign bodies and are either thrown off by the tissues themselves or because of irritation or infection are necessarily removed by the surgeon.

During the late war and in the post war rehabilitation period the use of organic transplants received its greatest impetus. The hideous mutilating wounds of the face incident to modern warfare produced a great source of material for this work and presented opportunity for wide experiment in supplying supporting structure for the face, jaw and nose.

Of the organic materials employed, ivory, which most closely resembles the structure of bone, was introduced by Joseph of Germany, who believes it to be superior to bone. There are some rather well grounded objections to this substance however, in that it is a very hard material and consequently awkward and difficult to shape and manipulate, except by the aid of specially devised accessories; it must be accurately cut and in many instances has not been well tolerated by the tissues. When a large quantity of material is required as in the complete reconstruction of the entire nose, it finds its greatest field of usefulness.

The employment of osseous and cartilaginous grafts or a combination of them is not new, but with continued experience and a sufficient amount of patients to work with, and due to modern methods of asepsis, the manner of their use has improved to a point where they are generally conceded to be the most satisfactory agents at our disposal. Experience has also taught us that the autoplasmic grafts are far more satisfactory than the homologous transplants, although these have been employed with some success.

The German surgeons are favorably disposed to bone transplants with its accompanying periosteum. The criticism of bone alone lies in the fact that success depends essentially on its intimate contact with the nasal or frontal bones and that the most painstaking and rigid sepsis is mandatory for a satisfactory outcome since bone is notoriously susceptible to infection. Its vitality is weak and once infection develops the loss of the entire graft is almost certain to follow. The nasal passages are very difficult to sterilize, the normal bacteria flora being numerous, and where the endo-nasal surgical approach is employed the danger of contamination is increased.

The tendency for bone transplants in the nose to undergo absorption has been pointed out by Davis, Maliniak, Sheehan and others. Davis, of Baltimore, who carried out extensive investigations along this line says: "With or without periosteum, the osseous graft is absorbed more or less quickly and it is impossible to predict the rate of absorption." In my own experience with osteo-cartilaginous graft, I have found these observations to be at least partially true. (Case No. 1.) It has been suggested by Davis and others that the reason for this absorption lies in the fact that the graft is only attached at its upper end and that its vascular supply is only problematical; also that bone grafts elsewhere in the body are either inlaid or onlaid in an intimate bony environment on all sides, so that their take is more likely to occur. While Israel as far back as 1895 used bone grafts derived from the tibia for nasal transplants, the ribs, because of the spongy nature of their structure and the fact that they are more accessible and more easily shaped and trimmed, according to the indications of the case, are undoubtedly the best source of supply.

Cartilage was first proposed by Von Mangold in 1899 for repair of the larynx and trachea and by Nelaton later for the correction of deficiencies in the bony structure of the nose. It has decided advantages

over bone in that it is infinitely easier to handle and can be molded, shaped and carved to conform to almost any depression of modern size. Its vitality is far greater than bone; it has no tendency to absorption and in the presence of ordinary infection it usually weathers the storm without loss of substance. (Case No. 4.) Its surgical approach is not difficult and it is available in sufficient quantities in most cases. Whether these grafts take as such or whether they become surrounded and encysted by fibrous tissue, I am unable to state. It is still an open question, but in a limited experience in my own work it has remained in place without change in size or shape, absorption or shrinkage, for two years. (My oldest case.)

Osteo-cartilaginous grafts were first recommended by Carter and are indicated where the space in the nose is large and where sufficient cartilage is difficult to secure. It has another advantage in those cases where deficiency extends into the base of the nose as it gives a harder, firmer support to the bridge. I have employed this

type of graft several times and found it met the indications.

In most all of these traumatic deformities of the nose the air passages are imposed on and a submucous resection necessarily precedes the cosmetic repair. In the seven cases which I wish to show you this evening this was necessary in all but one.

The graft requires about two weeks to take and by the end of four weeks is secure and well immobilized in the tissues where placed. The photographs following correction were taken from six weeks to two months after correction. My follow-ups have been fairly good and most of the cases I have to show you I have seen at intervals since their discharge.

OPERATIVE TECHNIC.

I have employed in my own cases the endo-nasal approach which recommends itself both because of a hidden scar, as well as for accessibility and for drainage, should such be necessary. This incision is preferable to the old transverse incision of Von Mangold which is placed at the base of the nose. The objection to Von Mangold's



Fig. 1-A.—(Case No. 1) Before operation.



Fig. 1-B.—(Case No. 1) Following operation. Osteo-cartilaginous graft.

incision is that it runs counter to all laws of surgical drainage and where the undermining of tissues, a conspicuous part of this type of surgery, is performed, there is always some serous ooze which, if left undrained, harbors infection. It is true that the operative wound in this external method or its modifications results in only a slight scar, provided primary union results. In the face of infection primary union does not follow and an embarrassing scar may follow. Frank and Strauss report such a case in which a secondary plastic operation was necessary to correct an ugly post-operative scar. These two surgeons propose the external route but suggest an incision at the inner angle of the eyebrow, over the superciliary ridge. In this way the scar is hidden by the eyebrow. Another external approach suggested by Monks consists in making a linear cut under the tip of the nose and tunnelling upward through the

soft tissues. Gillies, of England, a great plastic surgeon, makes his incision at the philtrum, detaches the skin which is thrown upward and secures a canal under this pedicle. In this way he obtains more operative space to work in.

The endo-nasal incision first suggested by Roe consists of an incision at the lower border of the triangular cartilage above the muco-cutaneous junction. By means of a periosteal elevator the mucus membrane and periosteum are separated, the elevator being carried toward the mid-line and upward, tunnelling through the tissues. The elevator is now reversed toward the tip of the nose to make a suitable bed for the reception of the lower end of the graft. This is followed by a curved Mayo scissors which is opened and closed in order to stretch the tissues.



Fig. 2-A.—(Case No. 7) Before operation.



Fig. 2-B.—(Case No. 7) Following operation.
Cartilaginous graft.

Preparatory to the incision the nasal vestibule is first cleaned of hairs and all debris removed. Alcohol followed by tincture of iodine, mercurochrome or 2 percent picric acid, is applied internally throughout the nasal cavity and externally over the entire nose, upper lip and portion of the face within the operative area. A nasal speculum is introduced into the nose and removed following the incision. The nostril is packed rather lightly with loose gauze to prevent blood from trickling back into the throat. Following the tunnelling of the tissues pressure is maintained by an assistant over the dorsum of the nose to control hemorrhagic ooze, and this is continued until the costal cartilage has been removed. I have been using the seventh, eighth or ninth rib for my grafts. The incision is made over the rib selected, near the sternum in the case of the seventh and eighth rib and

directly over the ninth or first floating rib, when this is employed. The cartilage is removed with its perichondrium. It has been recommended that the perichondrium be left intact for firmness although Davis believes it makes little difference. Care must be exercised in removing the cartilage or rib to prevent injury to the pleura. Closure of this wound is made as in any other costal incision. The length of the graft removed depends, naturally, on the size of the defect, but more rib is taken than is actually necessary for allowance in shaping. The graft may be placed in warm normal solution until ready to use or is directly introduced in to the nasal wound. An objection to the endo-nasal incision has been raised by some operators, who state that the operative field is cramped and that it is more difficult to obtain a perfectly straight alignment of the graft. I have

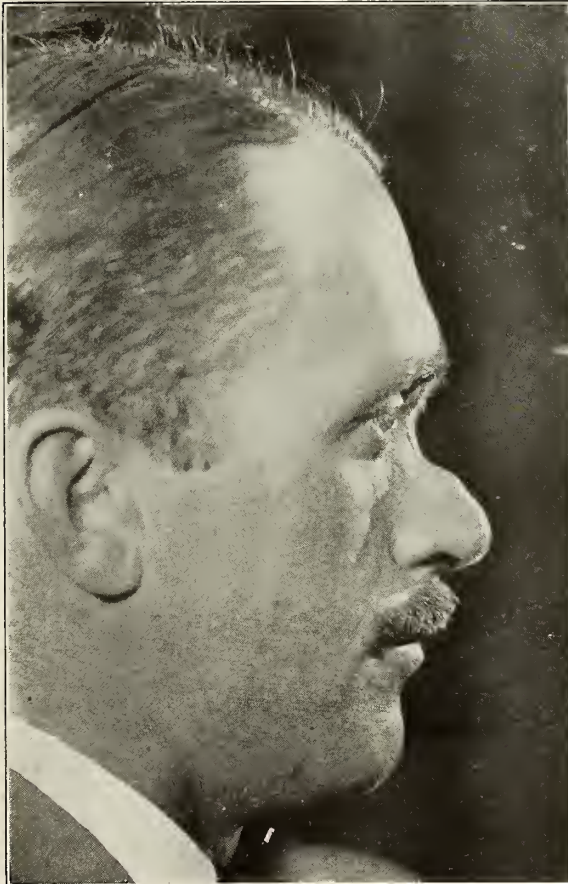


Fig. 3-A.—(Case No. 6) Before operation. Nasal bone practically destroyed.



Fig. 3-B.—(Case No. 6) Following operation. Cartilaginous graft.

found this to be true in my earlier cases (Case No. 2), but with more experience and a wider undermining of the tissues in all directions this difficulty has been minimized. With the graft in place the wound is closed by interrupted sutures of linen or silk which are removed on the second or third day, should drainage be necessary. The nasal vestibule is plugged with a loose gauze pack, two transverse strips or adhesive are placed firmly over gauze over the dorsum of the nose to immobilize the graft. This is all the dressing I have found necessary.

ANAESTHESIA.

In the average case and unless the patient is unusually apprehensive, both the nasal work and the resection of the costal cartilage is readily accomplished under local anesthesia. I have been using 1 percent and a $\frac{1}{2}$ percent novocain with adrenalin, 10 mms. to the ounce. Ether narcosis has been resorted to several times, particularly

where refracture of the nose is necessary or where the defect is high up on the bridge.

CASE HISTORIES.

Case 1. Dec., 1927. (Osteo-Cartilaginous Graft.) F. H., 36 years, white, male.

History of multiple fracture of nose at various times—total six. Following last fracture, nine years ago, an operation was performed to relieve obstructive breathing. Some months later patient noted that nose was becoming more and more depressed and this has progressively increased. He is very self-conscious about his appearance and willingly submits to operation for its correction. There is no history or suggestion of syphilis. Wassermann negative.

Operation. Local anaesthesia, 1 per cent novocain with adrenalin. Incision made at inferior border of triangular cartilage. Mucous membrane and periosteum separated with periosteal elevator, soft tissues under skin undermined and a bed made in the tip of the nose by means of forceps and Mayo scissors for reception of lower end of rib transplant. Eighth rib with its carti-

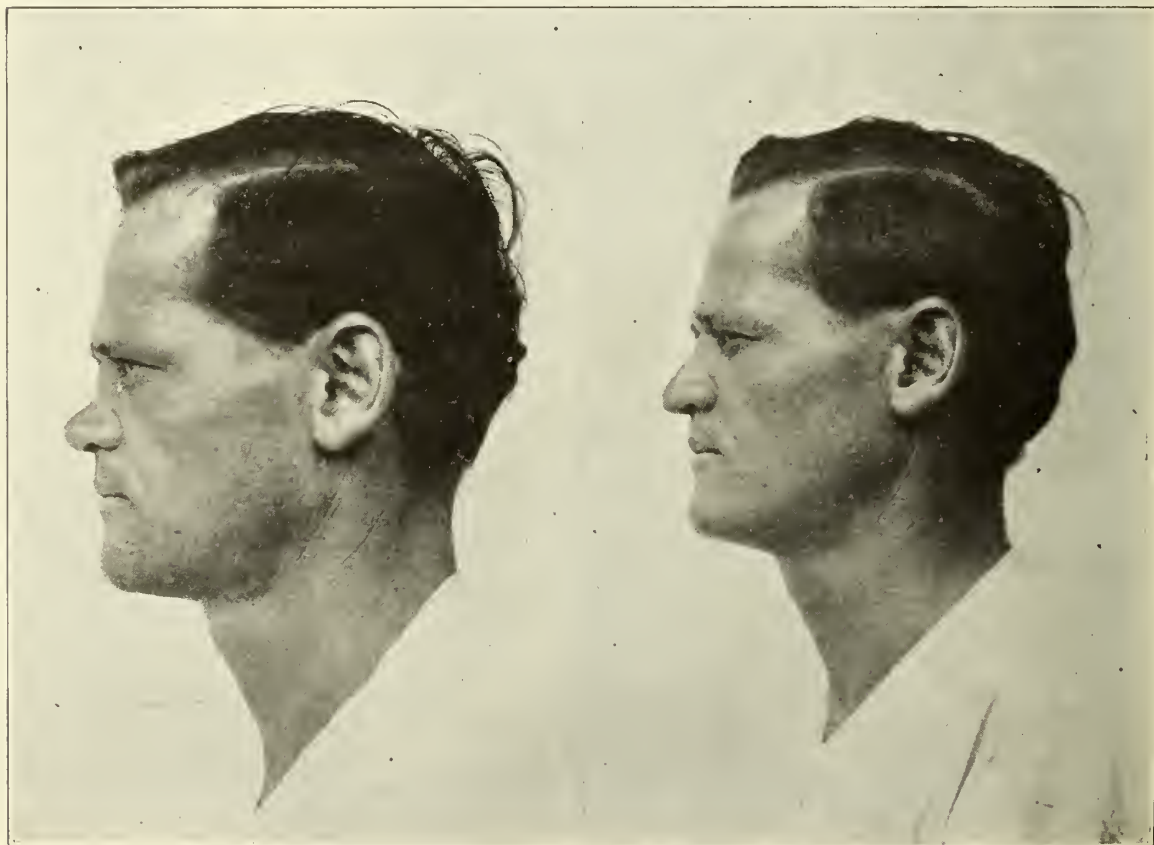


Fig. 4-A.—(Case No. 3) Before operation.

Fig. 4-B.—(Case No. 3) Following operation.
Cartilaginous graft.

lage resected, measured and shaped to meet the indications and inserted into endo-nasal wound.

Recovery uneventful but at the end of the second week a swelling appeared at the upper end of the graft which was definitely fluctuant. Some few days later this was relieved by external incision. Cloudy, serous, oily material was recovered, but no infection was present. The stab wound promptly healed and the graft is a successful take.

Patient has been seen within the last three months. Graft in place, firm and presents no further evidence of absorption.

Case 2. July 11, 1927. (Cartilaginous Graft.) J. B., 49 years, white, male.

History of extensive depressed fracture in 1918. In 1921 a piece of cartilage was removed by operation. Because of appearance he comes for cosmetic repair, if such is possible. Examination shows a protruding mass on the left side of the nasal bone, marked depression of the nasal septum and over the right side of the base of the nose.

Operative procedure same as in case 1, except that a resection of the bony mass was performed

by chisel, followed by file. Post operative condition was excellent for 10 days when a definite bowing and lateral displacement of the graft was noted. This was probably due to the fact that the patient removed the immobilizing dressing too soon and perhaps also to contraction of the perichondrium of the graft noted in cases before by Maliniak and others. No infection present. Patient not seen since discharge six weeks after operation.

Case 3. Nov. 4, 1927. (Osteo-Cartilaginous Graft, Ninth Rib). J. A., 53 years, white, male.

History of injury in 1922 when block and tackle weighing about 7 lbs. fell from rigging of ship, a distance of about twenty feet, striking patient in nose. As a result nose was badly fractured with marked displacement. Patient saw a doctor 22 days later but no treatment was given. Two months later patient consulted another doctor in New York who told him it was too late to help him. Two years ago a sub-mucous resection was performed in Porto Rico. Examination by Dr. Padgett, Marine Hospital, on November 7, 1927, disclosed a remaining deviation of the nasal septum. This he operated upon.



Fig. 5-A.—(Case No. 5) Before operation.



Fig. 5-A.—(Case No. 5) Following operation. Osteo-cartilaginous graft.

Examination shows nose badly fractured with marked displacement and deformity. Marked depression of the nasal pyramid is also present.

Operation March 7, 1928. Refracture of nose was accompanied by a small padded mallet, the nose being well protected by a heavy gauze pad. Operative technic same as in other cases. Graft showed perfect take four weeks after surgical intervention. Patient seen three months ago, presenting good operative results. There is mobility to the graft at its upper end probably due to fibrous tissue.

Case 4. Dec. 7, 1928. (Cartilaginous Graft, Ninth R.b.) J. S., 43 years, white, male.

Patient gives history of fractured nose on several occasions. Examination shows a sunken nasal septum which is very disfiguring. The nasal bone is deviated to the right, the result of injuries.

This patient has had syphilis and was treated for a long period of time. Absorption of nasal septum may be probably attributed to this disease.

Operation. Endo-nasal route same as in previous cases.

Infection noted three days following operation accompanied by excessive swelling and all the cardinal signs of inflammation. Drainage of thick yellow pus was secured by opening endo-nasal incision and inserting forceps. Drainage continued for about three weeks. Cartilaginous graft remained in place after infection had subsided. The result is quite satisfactory and the appearance of the patient was greatly improved when last seen, six months after operation.

Case 5. April 16, 1928. (Osteo-Cartilaginous Graft.) J. O., 44 years, white, male.

History of syphilis in 1923. Intensive treatment in Galveston. Has had treatment on and off since. Wassermann negative at present time.

Examination of nose shows depression and absorption of nasal septum giving saddle back appearance.

Osteo-cartilaginous graft—endo nasal incision June 29, 1928. Some absorption of osseous end of graft. Skiagraph taken August 24, 1928, reports "Apparent partial absorption of the rib graft."

Patient seen January, 1929, six months after operation. No further absorption of graft and patient's appearance is definitely improved.

Case 6. March 28, 1928. (Cartilaginous Graft.) F. G., 30 years, white, male.

History of osteomyelitis of nasal bone in 1917 following lacerated wound at base of nose. Operative removal of practically entire nasal bone. Patient presents unsightly deformity of nose at base with extensive cicatricial tissue. He is self-conscious about his appearance and thinks his advancement in his work has been retarded by his deformity.

Operation—Endo-nasal route—incision made high up in nasal vestibule to facilitate access to site of deformity. Convalescence uninterrupted. Operative result excellent. Heard from last December 24, 1928. Graft in place. No shrinkage. Patient now first mate on ship. (Note difference in expression before and after repair.)

Case 7. November 3, 1929. (Cartilaginous Graft, ninth Rib.) S. G., 19 years, white, male.

Congenital deformity of nose, "Pug Nose." Operative technic (endo-nasal route) as in previous cases. Convalescence excellent. No infection. Good operative results.

Patient seen this month. Graft in place. No absorption.

SUMMARY.

1. Nasal deformities are usually disfiguring and present both a surgical as well as an economic problem.

2. Costal cartilage is the material par excellence for the repair of loss or skeptical support of the nose.

3. The most rigid asepsis is essential for results.

4. The seventh, eighth and ninth ribs are those best suited for grafts by reason of their accessibility and source of cartilage.

5. The endo-nasal operative approach is recommended as it results in a hidden scar and satisfies the laws of surgical drainage.

In conclusion, I wish to express my appreciation to Dr. William A. Padgett, Chief of the Ear, Nose and Throat Department, U. S. Marine Hospital, for his helpful suggestions and his performance of the submucous resections, and to Mr. Guy Buisson of the Roentgen-ray Department for the preparation of the accompanying slides.

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DISCUSSION.

Dr A. I. Weil (New Orleans): Dr. Metz asked me to discuss his paper, which I am very glad to do, but I regret not having had the opportunity of reading it beforehand. I have, however, subsequent to operation, seen some of Dr. Metz's patients, with photographs before the operation, and I want to say that the improvement was even greater than is shown by these pictures of the outcome. Dr. Metz is to be congratulated on his excellent results in a procedure which is now fairly common, but which does not always give such uniformly good effects as he obtains. This success I attribute to his skill, the excellent technic employed, and the aseptic precautions taken to safeguard against infection.

The osteo-cartilagenous graft is the outcome of a process of evolution, a number of things having been used throughout the years. Those of us who can remember twenty or thirty years back will recall such cases treated with paraffin injections and the beautiful results that paraffin gave. We were delighted with those noses but, unfortunately, they did not stay in place or retain their shape—a beautiful nose for three or four years, then a nose which was probably worse than the original. Ivory has been used rather successfully by Beck of Chicago in several cases. His efforts in that direction are, however, he tells me, only experimental as yet. The only advantage that ivory offers is that it is easier to get and we avoid the extra operation of removing a graft from the rib, or tibia, or any portion, that we want to use for the transplant. For the general surgeon, of course, a rib transplant is very easy to remove, but for the nasal surgeon, taking a piece of rib is not so

simple a procedure, and unless he is going to call in a general surgeon to do that part of the work, it may be better for him to use bone from some other region. To remove a piece of bone from the tibia is quite easy. Beck has had excellent results with grafts from the tibia and arm. Tieck of New York uses the cartilage that is obtained from the septum at the time of the submucous resection. As you see from the plates, nearly all these cases have some deflection of the septum and submucous resection is a part of the operation. Tieck does the resection at the time that he does the plastic, using the septal cartilage as a graft with good results. Cartilage, as Dr. Metz stated, is the material to use for the correction of nasal deformities. Of course, in dealing with large nasal defects (as in some of the cases he has shown), where there is lack of both bone and cartilaginous substance, the osteo-cartilaginous portion from the rib is the ideal transplant, as it supplies the same composition that the nose had before.

But whatever the method used, the result adds much to the appearance and happiness of your patient. These people go about seeking work, obsessed with the idea that they are objects of ridicule, and the added contentment, happiness and success that they have in their work is sufficient reward for any pains and difficulty we may have experienced in working up that operation. I remember a nurse at Touro who had a marked deformity of the nose. I operated on her shortly before she graduated and not long after she was happily married. I believe I am responsible for her happiness because I do not think she would have gotten a husband with the nose she had.

Dr. Keith Kahn (New Orleans): I congratulate Dr. Metz upon the splendid results he has achieved in his cases, which demonstrate his superb artistic ability and remarkably keen surgical judgment. However, there are one or two steps in the routine of this operation which he either does not use in his technic or possibly fails to mention. Just as an architect in constructing or reconstructing a building has a model from which to execute his work, so the plastic surgeon, in a nose of this type, requires a model by which to do the operation. The routine that I employ in my clinic is somewhat like this:

If there is a concavity I take a plaster cast of the nose, using quick-setting plaster - of - Paris. (One or two minutes suffices for its setting.) Before taking the impression, I grease the face with vaseline or some oily substance and stuff the nostrils with cotton. This procedure prevents the hairs from adhering to the plaster. During the taking of the cast, I keep the mouth of the patient wide open to facilitate breathing as well as to relieve any discomfort and to allay any anxiety that may be felt by patients inclined to be

nervous. From the cast I make a plaster mold which is an exact duplicate of the nose. Using ordinary sealing wax, I correct the deformity on the mold. When the wax is removed from the mold, I have an exact pattern of the required cartilaginous or osteo-cartilaginous graft. I always take this wax model to the operating room and, if necessary, have it sterilized. A point worth remembering is that your model fits over the skin and that the increase in size must therefore be compensated for—the graft should be slightly smaller. I shape the graft from the model and insert it by the intra- or extra-nasal route, as the case demands. The graft should fit the nose like a saddle. When the graft is removed from the eighth or ninth rib, the perichondriated side contracts. This contraction is relieved by making criss-cross incisions in the perichondrium.

The cartilaginous graft, in my opinion, is the best of all, first, because it is never absorbed, and secondly, because it is pliable and may easily be cut to fit the deformity. I have cases, operated upon eight years ago, in which cartilage was used, and in which, to date, no absorption has taken place. However, in the osteo-cartilaginous grafts, partial absorption frequently occurs, and the results are not always good.

Whether the incision for introducing the graft into the nose should be made intra- or extra-nasally, seems to be a matter of opinion. However, I have found (in a hundred cases) that in traumatic conditions the intra-nasal is the proper method, whereas, if an endocrine disturbance or a hereditary syphilitic condition is suspected, the incision between the eyes is the proper one, because, under these circumstances, the graft "takes" slowly, serum collects, and infection may occur with sloughing. The extra-nasal incision permits the insertion of a small drain and minimizes the chances of infection. As for the scar between the eyes, it is hardly noticeable, because, after healing, it is peeled four or five times. The peeling is followed by manipulation.

The use of foreign bodies, whether celluloid, ivory, platinum, paraffin, or any other substance of the kind used in the support of tissues should be earnestly discouraged, because frequently sloughing of the skin and surrounding tissues occur if a severe blow is received over the inserted foreign substance. I have seen this disastrous result occur in several cases; the use of foreign bodies is a procedure that deserves condemnation.

A frequent reason for the performance of a rhinoplasty on the saddle-back nose is to remove the syphilitic signboard. Many people who have

noses of this type are suspected of having syphilis, in which case the operation is done purely for cosmetic purposes. However, I have found that, in the field of plastic surgery, about sixty percent of the patients seek relief from these deformities in order that they may comfortably wear glasses, which the majority of them need.

Dr. George B. Collier (New Orleans): I had the pleasure, at the Ear, Nose and Throat Hospital, of seeing Dr. Metz's cases.

Dr. Metz spoke of the endo-nasal method of approach and of the danger of infection, which I do not think is as great as he represents. In doing submucous work our results are as good when we do not use mercurochrome or picric acid as when we do. I have tried asepticization and thought I got wonderful results, but in a series of cases I see no difference. However, when I have a case that I am unusually interested in or anxious about I apply either picric acid or mercurochrome. It has been proven that the mucous membrane of the nose cannot be sterilized without killing it. When we go into the ethmoids and sphenoids it is impossible to render them perfectly aseptic, and I am certain that a patient will not develop meningitis unless we go in and open up the brain. Every precaution should be taken not to traumatize any more than we can help.

I believe that Dr. Metz is a little too apprehensive about infection from the endo-nasal route; if he will bear this in mind and avoid all possible trauma and continue the intra-nasal method, his excellent results will really continue to improve.

Dr. Waldemar Metz (closing): I wish to thank the gentlemen for their liberal discussion of this subject and their generous remarks.

In reference to what Dr. Weil said about septal cartilage, Dr. Rolf of Montreal, who has done quite a good deal of this type of work, states that septal cartilage is made up of yellow elastic tissue which is absorbed rather readily. I have had no experience with it.

Dr. Kahn's remarks about the model are all quite well taken. I forgot to mention that in the last two cases I had a plaster cast made of the nose by the Dental Department in the hospital, followed by a hard rubber mold. I find it facilitates the formation of the graft and minimizes the possibility of infection by introducing the graft into the nose, taking it out, shaping it over and replacing it. I agree with what he says also in regard to incisions over the graft to take care of any collection of serum that might lead to infection and sloughing.

DIAGNOSIS AND TREATMENT OF INTRACRANIAL HEMORRHAGE IN THE NEWBORN.*

E. L. KING, M. D.,† and MAUD LOEBER, M. D.,‡

NEW ORLEANS.

This condition is so frequently encountered, and is so often fraught with such serious consequences for the child, that we feel that no apology is needed for again calling it to your attention. As in many other morbid lesions, prophylaxis is of the greatest importance, and it is this phase that we especially wish to emphasize. The problem is both an obstetrical and a pediatric one, and so the cooperation of workers in these two fields is essential in order to obtain the best results.

There are many types of lesions, but we feel that it is hardly necessary to consider the details of the various pathological findings, as the symptoms are in the main similar and the treatment is along the same general lines. Suffice it to say that the new born infant can tolerate a fair amount of cortical hemorrhage, because of the yielding of the skull on account of the non-ossification of the sutures and fontanelles. On the other hand, any appreciable accumulation of extravasated blood around the medulla or increase of pressure in this region, is frequently accompanied by symptoms of marked derangement of function, and death not infrequently results.

In consulting the literature of intracranial hemorrhage, we have found many series of post mortem reviews on stillbirths and newborns and we were impressed with the uniformity of the findings.

Holland⁽¹⁾ in a group of 167 autopsies on newborn infants found intracranial

hemorrhage in 50 per cent, while Adair and O'Brien⁽²⁾ in 300 autopsies found that in the stillbirths 60 per cent showed hemorrhage and in full term infants 70 per cent. Warwick⁽³⁻⁸⁾ in a review of 38 autopsies of newly born infants found intracranial hemorrhage in 47 per cent, while the Manhattan Maternity hospital in 100 consecutive autopsies in which the head was opened, found that 40 per cent died from cerebral hemorrhage. We ourselves have frequently observed this factor as the cause of death at not a few of the autopsies we have attended in our service at Charity Hospital, and for that reason felt a discussion of the topic timely.

In enumerating the causative factors in a former discussion, one of us stated that sepsis, mechanical pressure, blood vessel resistance, blood dyscrasia, peculiarity in the tissue of the newborn, blood vessels demonstrating some physiological incompleteness of the newborn baby, as well as toxins (especially in the case of babies born of eclamptic mothers), syphilis, cranial stress, and trauma, are all given serious consideration by various authors. Grulee⁽⁵⁾ and Bonar⁽⁵⁾ state that it is a well known fact that prematurity and instrumental deliveries are responsible for a large proportion, but they themselves rather minimize the statement that instrumental deliver alone is responsible in a large proportion of the cases.

Pearson and Wyllie,⁽⁶⁾ in discussing the subject, quote Brown⁽⁷⁾ as stating that "from a series of 120 stillbirths and 80 neonatal deaths no case of cerebral hemorrhage occurred in a full-term child in which delivery was a natural process." Warwick⁽³⁻⁸⁾ thinks that a large proportion of her cases are definitely due to hemorrhagic disease, while Adair and O'Brien⁽⁵⁾ think that 90 per cent of their cases are of traumatic origin.

As this is an obstetrical condition, it of course develops at or before birth, so a con-

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sideration of the prenatal symptoms is essential. We are all familiar with the text book statements that a fetal heart rate over 160 or less than 100, or the escape of meconium in vertex presentation, are signs of fetal distress. But these points need elaborating, and there are others to be mentioned. Clinical experience has shown that a rapid fetal heart rate, while deserving great attention, is not nearly so serious as a slowing heart, especially when irregular. It is a great mistake to wait until the rate reaches 100 before becoming worried about the baby's condition as by this time a most serious lesion has frequently developed. Furthermore, we have noted these points as regards the irregularity of the fetal heart: (a) that the fetal heart is normally irregular for a few seconds after a uterine contraction (say $\frac{1}{4}$ of the time between pains); (b) that frequently this period of irregularity is prolonged to about $\frac{1}{2}$ the period between the pains, which usually means that the cord is around the neck and is drawn tight during contractions (but not in all instances of cord around the neck is this noted); (c) that when the irregularity persists for the whole inter-pain period, the infant's head is being dangerously compressed, and delivery as soon as possible without inflicting further injury is indicated. The escape of meconium in vertex presentation is an indicator that fetal asphyxia is impending, but recent observations here and elsewhere indicate that it is not so important a sign as it was formerly considered. Many cases have been noted in which this escape of meconium occurred yet the fetal heart tone remained normal and the baby was delivered in good condition. Other factors to be considered are the length of the second stage (not of the entire labor), the strength of the uterine contractions, and the position of the head. Thus, with the head in the R. O. P. or especially in deep transverse arrest, with strong or overstrong pains, a relatively short period of time will suffice for the infliction of severe damage to the

cranial contents. The use of pituitrin is a frequent factor in the causation of this condition, and it should be employed very rarely and very cautiously in the second stage.

Instrumental delivery is frequently responsible for the development of this condition, especially when performed too rapidly or too early or in an unskillful manner. It is frequently found in the after-coming head in breech presentation, due to the various stresses so rapidly applied to the head. It has even been noted in infants delivered by Caesarian section, but here it is very probable that it had already developed before the operation was begun.

The symptomatology depends somewhat on the site and extent of the bleeding. The history of the labor may aid in anticipating symptoms of intracranial hemorrhage according to Foote⁽⁹⁾, although it frequently occurs after ordinary normal delivery. Generally speaking, it may be watched for: (1) "After very rapid delivery, especially of premature infants; (2) after breech delivery, especially following version or difficult extraction; (3) after protracted labor, especially accompanied by instrumental delivery; and (4) when spontaneous hemorrhage is seen."

Foote⁽⁹⁾ recognizes two clinical types of intracranial hemorrhage (a) the rapid traumatic type (massive hemorrhage) due mainly to the rupture of a large vessel or vessels in which symptoms appear very soon after birth and in which hemorrhagic tendency plays a minor role; and (b) the slow spontaneous type (the delayed hemorrhage) due to an injury of minor degree which has been made dangerous through the innate tendency to bleed. Intermediary types are found, he says, and here belong those infants in whom asphyxia is at least a predisposing cause.

In the massive type, the baby is generally restless, cries excessively at first, which is followed by feebleness of cry,

lethargy, tremors of arms and legs, or convulsions. If lethargic, the baby is relaxed with arms limp instead of flexed and drawn to sides, the legs limp and extended instead of flexed and drawn up on the abdomen. The infant is cyanotic, refuses to nurse and in severe hemorrhage the lip reflex is absent. In a hemorrhage over the vertex one observes a bulging fontanelle. Death often occurs within a short time after delivery. If the case goes on to recovery it usually results in a spastic paraplegia or mental retardation.

In the delayed hemorrhage caused by a rupture of a small vessel somewhere in the cranial cavity, either on the vertex or in the layers of the tentorium, it is possible that hemorrhagic diseases of the newly born is an underlying factor, as instanced by the prolonged coagulation or bleeding time. Rodda⁽¹⁰⁾ suggests routine coagulation and bleeding time to determine the complication of hemorrhagic disease of the newly born. In this type the infants appear normal at birth and after about 24 hours there may be irritability, with high pitched cry, intermittent cyanosis and pallor (due to increased cerebral pressure), twitchings, or lethargy with a disinclination to nurse, and tenseness of the fontanelle. When the hemorrhage is below the tentorium the cyanosis is early and marked, the fontanelle does not bulge early and retraction of the head is frequent. When the facial and other cranial nerves are affected, they show paralysis of a bilateral type. In hemorrhage below the tentorium Foote⁽⁹⁾ states that the infant frequently protrudes its tongue to an abnormal degree, but although this is an early symptom it is not an invariable one; when present he believes it due to the irritation of the hypoglossal nerve.

When the hemorrhage is in the region of the hemispheres, cyanosis comes rather late, retraction of the head is usually not present, and the fontanelle is usually firm and bulging. Morse⁽¹¹⁾ states that in a general way convulsions, rigidity, and bulg-

ing of the fontanelle are more likely to be present if the bleeding is largely above the tentorium and respiratory disturbances if it is below.

Focal symptoms are not to be relied upon in newborn infants. Grulee⁽¹³⁾ states "no matter where the convulsion is, it has no significance as to the location of the hemorrhage."

Differential diagnosis: Cyanosis is also seen in congenital heart disease. This condition is relatively infrequent in autopsy findings as compared to cerebral hemorrhage, and in addition the cyanosis is not so persistent. Asphyxia (livida and pallida), while often present as definite entity without hemorrhage, is also often associated with cerebral hemorrhage of the newborn. The history of delivery, the tenseness of the fontanelle, coma and paralysis aids in making a differential diagnosis pointing toward hemorrhage. (Holt and Howland⁽¹²⁾). Pneumonia in the newborn usually shows the symptoms of general septicemia, with no findings on physical examination of the lungs, but the fever, irregular breathing and cyanosis point toward pneumonia. Some cases occur in which the infant refuses to nurse and does not cry, sleeps all the time for apparently no reason. There are also muscular twitchings occasionally occurring without any accompanying symptom. These symptoms not infrequently occur in premature infants. Whether or not these are manifestations of intracranial hemorrhage is a disputed question at this time. Spinal puncture or cisterna puncture is used for diagnostic and therapeutic measures. Morse⁽¹¹⁾ in quoting Munro⁽¹³⁾ states that normal cerebro spinal pressure in new born infants is 6 millimeters of mercury and anything above 10 millimeters is abnormal. Congenital debility or prematurity is often associated with intracranial hemorrhage. One finds no distention in the fontanelle, but rather a depression in the fontanelle of the premature infant. In sepsis, although one may have cyanosis and

also twitchings, the bulging of the fontanelle is never seen, and the spinal fluid is also of diagnostic aid. Icterus gravis as well as hemorrhage are unaccompanied by fever. In icterus gravis there is hemorrhage from various places, and icterus is more marked. In icterus convulsive seizures are not an outstanding feature. Enlarged thymus presents definite symptoms referable to the enlarged merit, viz., noisy and difficult respiration, and cyanosis, which cyanosis may be intense and may be attended with convulsions. This condition is, according to Holt and Howland⁽¹²⁾, differentiated by roentgen-ray findings and spinal puncture.

A recent personal experience will serve to emphasize the difficulty at times encountered in differentiating between enlarged thymus and intracranial hemorrhage. There was a history of long and difficult labor with oversized baby, weight 9 pounds 11 ounces. The mother was a primipara over 30 years of age. The baby exhibited the following symptoms: Noisy and stertorous respiration, cyanosis, tense fontanelle, muscular twitchings and convulsions. Cisterna puncture showed spinal fluid under pressure and bloody. The symptoms improved to return about 12 hours later. Another puncture revealed the fluid slightly tinged with blood and not under pressure. The symptoms this time were not much relieved, and a third puncture showed practically clear fluid and not under pressure. A roentgenogram showed an enormous thymus filling almost the entire chest. The baby died immediately after being rayed. Partial autopsy, the head only being opened, showed a slight tear along the free edge of the tentorium, no free blood in the cranial vault nor at the base of the brain nor in the ventricles nor on the hemispheres of the brain.

It is, of course, much better to prevent the occurrence of this condition, and its prophylaxis consists, in the main, in the application of correct obstetrical principles. Most, but not all, of these intracranial injuries resulting in hemorrhage can be

avoided. Accurate prenatal study should discover for us the cases of disproportion and malpresentation and careful and frequent auscultation of the fetal heart tones during labor, especially during the latter part of the second stage, will often give us our first indication of impending trouble. The timely use of forceps will save many a baby's life. But too early a resort to this instrument will often be responsible for intracranial hemorrhage, while on the other hand if intervention is postponed too long, damage may have occurred which could have been prevented by earlier interference. As a general rule, the lower head the easier the forceps operation and the safer for the baby. Early recognition of bad presentations and faulty positions, and prompt correction of the same, are matters of importance. The careful management of breech presentations, conducting the delivery with expedition but not with frantic haste, and the resort to forceps on the after coming head when its extraction is difficult, will avoid trouble in many cases. In patients with borderline pelves, an adequate test of labor is essential (say four to six hours of good pains), but too much pounding of the head upon the superior strait may cause intracranial damage before the final resort to Cesarean section. At times, the induction of labor in case the baby is becoming unduly large is indicated.

De Lee has two slogans: "First of all, do no harm," and "Not by strength, but by skill."

The curative therapeutic measures almost universally recommended are the administration of 20 to 50 c.c. of whole blood or citrated blood intramuscularly, intraperitoneally or subcutaneously. If blood is given intraperitoneally, it should be typed. Horse serum in lieu of human blood may be used. If no blood is immediately available, fibrogen (Merrill), 1 c.c. or Squibbs' thromboplastin, 10 c.c., should be given subcutaneously. Absolute quiet is enforced, no vigorous handling or nursing, Breck feed-

ing is preferable, and cold is applied to the head. Bromide or chloral bromide is given to control the convulsions, and oxygen for the cyanosis. Trephining for relief of pressure or osteoplastic flap flap resection have been suggested, as well as decompression operations for removal of organized clot. Spinal puncture or cisterna puncture is done, repeated every eight to twelve hours for relief of symptoms or until the fluid returns clear, or is not under pressure. We believe that cisterna puncture is preferable to spinal puncture, as the bending of the body increases pressure and thus favors hemorrhage.

CONCLUSIONS.

To summarize then, we may say that accurate prenatal study and good obstetrical care will generally prevent the development of this complication. Careful observation of newborn babies, especially of those delivered instrumentally will enable us to detect symptoms in their incipency, and to institute treatment early. Repeated spinal or cisterna puncture, supplemented by other measures, as outlined above, is our main recourse. Decompression is rarely indicated, and is associated with considerable danger.

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DISCUSSION.

Dr. Chas. A. Bahn: About 25 to 40 per cent of all infants at birth have retinal hemorrhages. Most of these are absorbed within 24 to 48 hours and without permanent damage to the eye. Occasionally, however, where absorption does not completely take place for weeks or months, permanent damage to sight may result.

Will Dr. King tell us whether or not, in his opinion, retinal hemorrhage is co-incident with intra-cranial bleeding at birth and if the severity of the retinal condition might not be an index to the ventricular condition.

We are indebted to Dr. King for his interesting and painstaking investigation of an important subject.

Dr. R. A. Strong: I have not made up my mind as to whether intracranial hemorrhage is on the increase or not but I am convinced that since pediatricists and obstetricians have been co-operating in studying it, it is recognized much more than formerly. There is one thing certain and that is there has been a notable increase in the literature on the subject. For a long time, it will be recalled, obstetricians treated the baby as a sort of by-product like the placenta and believed that the mother required more of their attention. (Of course I do not refer to any of those present).

It required no small amount of discussion before pediatricists and obstetricians got together and some of this discussion was quite vigorous at times. I recall a particular medical meeting at Hot Springs about eight years ago when this subject was discussed between these two groups. It has been written that friction generally polishes and from this conflict of opposed opinion progress resulted so that at the present time the obstetricians over the country agree that the baby should be examined carefully by the pediatricist immediately after birth. Much information has been acquired as a result.

The symptoms most frequently noticed in intracranial hemorrhage of the newly-born may be immediate or they may be delayed for several days after parturition. One of the first things noticed is the cessation of normal nursing after it has been established. The child may be either very restless or crying all the time with a shrill cry suggestive of meningitis, or it may be very quiet and limp. It is usually pale and often cyanosed. The pulse may be either slow or rapid. The temperature may be normal, subnormal or high. High temperature may be explained by the fact that the infant has not taken a sufficient amount of fluid.

Difficulty with respiration is another frequent symptom. Bulging of the anterior fontanelle, while often present, is not a common symptom. Blood in the spinal fluid is an important symptom. Dysphagia occurs with an inability to suck and a difficulty in swallowing. Signs of cerebral irritation occur, consisting of twitching of the hands and feet, nystagmus or even convulsions.

There may be evidence of hydrocephalus if the intracranial lesions are in the proper place to obstruct the foramina.

Formerly it was the custom to attribute intracranial hemorrhage to poor obstetrics, and while it is still true that trauma is the greatest single factor causing the condition, there are others together unrelated to obstetrics. Those which have been emphasized in recent contributions are prematurity, syphilis, maternal toxemia, asphyxia, which is usually accompanied by venous congestion, sepsis neonatorum, congenital anomalies and imperfect vascular development. Concerning imperfect vascular development much has been written. This condition has been detected as a direct result of more perfect autopsy technic. Much of the hemorrhage observed as a result of this cause is capillary. It is for this reason that one author spoke of it as "incomplete architecture of the capillaries." Naturally birth trauma can supplement any one of the foregoing conditions in the production of intracranial hemorrhage, but one or more may act as causative factors without birth trauma.

Of the obstetrical factors which have been most frequently emphasized, breech presentations with the sudden compression of the after-coming

head, perhaps in the wrong diameter, still lead the list.

There can be little doubt but that there remains much to be learned concerning intracranial hemorrhage in the newly-born. It is still a fertile field for study, but much can be done in this condition to prevent serious consequences if it is detected early enough.

Dr. Edwin A. Socola: I think that a good rule to follow in the treatment of intracranial hemorrhage of the newborn is that of Munro who considers 6 mm. of mercury as the normal cerebrospinal pressure and that anything above 10 millimeters is abnormal. Under 18 mm., lumbar puncture is performed to relieve the intracranial pressure, above 18 mm., he considers the necessity of ventricular puncture or subtemporal decompression.

Dr. E. L. King: (Closing): In regard to Dr. Bahn's question, I would like to have him study some of the eyes in newborn babies.

As Dr. Strong suggested, intracranial hemorrhage is not on the increase, rather, it is recognized more than formerly. I feel that many of these conditions that we used to diagnose as asphyxia of the newborn are really instances of intracranial hemorrhage. We frequently have babies that do not breathe well and have learned not to work on them so vigorously as we used to, to bring about respiration. In these cases at Charity Hospital, where babies do not breathe readily, we bring about respiration by artificial means. We do a spinal puncture and if we find hemorrhage it has done good; if we find no hemorrhage, we feel relieved.

In about five per cent of newborn babies there will be intracranial hemorrhage. We do not get intracranial hemorrhage after many normal deliveries, but we do at times. We see it especially in large babies or premature babies, so it is not always traumatic.

Again, spinal puncture does not always tell the whole story. Some give clear fluid without abnormal pressure, but on cistern puncture we get bloody fluid under increased pressure. Cistern puncture at the hands of those skilled in its technic is preferable, but unless the attendant has trained himself to do this, it is better for him to employ spinal puncture.

THE DIFFERENTIAL DIAGNOSIS OF
LAME BACK.*

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Lame back is one of the commonest ailments of man. The causative pathological manifestations, to the medical man, are oftentimes most elusive and the professional compensation seeker has, unfortunately, for many years thoroughly appreciated the potential possibilities of pain in the lower back. The railway spine has definitely taken its place in the field of surgical diagnosis as a distinct clinical entity, with an agonizing symptom syndrome soothed only by the balm of a court decree.

We must not forget, however, that some patients suffer severely from slight lesions and, contrariwise, lesions which would appear to be the basis of a most severe train of symptoms may cause little or no discomfort. It is then obvious that partial examinations should be taboo, the words lumbago and rheumatism of the back for the most part forgotten, and a diagnosis be made only in the light of an accurate history, a general physical examination, examination of the spine, examination of the extremities, a neurological examination and carefully made roentgenographic studies.

The etiological factor in low back pain may be placed in one of the following categories:

- (1) Diseases of the abdominal viscera.
- (2) Tumors of the spinal cord and vertebrae.
- (3) Traumatic conditions.
- (4) Arthritis of the spine.
- (5) Diseases of the vertebrae.
- (6) Disturbances of posture and developmental anomalies.

ABDOMINAL DISEASES.

The following abdominal conditions I but mention to emphasize the necessity of a general examination because of the multiplicity of lesions, the presenting symptom of which is at times low back pain: nephrolithiasis, infections of and about the kidney, acute nephritis, prostatitis, rectal diseases, gynecological diseases, retrocecal appendix, splenomegaly, carcinoma of the stomach, and many, many others, even including pregnancy.

TUMORS OF THE SPINAL CORD AND VERTEBRAE.

Cord—Tumors of the cord are rare and when present are usually sarcoma, fibroma or glioma. They occur most frequently in the posterior and lateral portions of the thoracic cord. The symptoms are indefinite. They are usually those of pressure on the cord or nerve root irritation. The injection of lipiodol may be of assistance.

Vertebrae—Benign growths rarely occur here. Tumors of the vertebrae are usually sarcoma, carcinoma or myeloma. Diagnosis may require prolonged observation. When vertebral tumor is suspected malignancy should be carefully sought for elsewhere in the body, as sarcoma is most often, and carcinoma always secondary when present in the spine. Cord symptoms occur early, are pronounced and completely out of proportion to the cord symptoms of tuberculosis. Tumors occur usually in the third age period, that is between the ages of 40 and 60 years. From the roentgen-ray point of view they are differentiated from other affections by the fact that the body alone is affected, there is no angulation until the late stage is reached, seldom displacement, but narrowing of the body with or without new bone production.

TRAUMA.

Fractures and Dislocations of the Vertebrae—Here we have the usual symptoms of lame back: pain, stiffness, limitation of motion, muscle spasm and flattening of the lumbar curve—none of which are diagnostic. Carefully made and carefully read roentgenograms are most essential. Here,

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as in all suspected spine affections, anterior-posterior plates should be made in stereo and checked by lateral views. There is this one point to remember: in compression fractures there may be no early symptoms whatever, but later on, as bone begins to form, lame back develops and at times with a small kyphos.

Tears of the Spinal Muscles—This condition is known by the misnomer lumbago. The diagnosis is based upon the history of injury, which differentiates it from simple myositis from exposure to cold. Negative roentgen-ray plates help eliminate osteoarthritis, fractures, postural backaches and congenital anomalies. In severe cases swelling is evident from profuse hemorrhage. In minor cases recovery takes place within two weeks.

Sacro-Iliac Strain—In this condition the roentgen-ray may be of little value. The chief symptom is localized pain and tenderness in the region of the posterior sacro-iliac ligaments. Immediately after the accident the pain may be agonizing and the patient unable to move without extreme distress. It is to be differentiated from infectious arthritis and tuberculosis of the sacro-iliac joint, but is most likely to be confused with lumbo-sacral strain. From the latter it exhibits the following points of differences:

Sacro-Iliac — (1) Leverage unilateral via lower limb, (2) pain referred to posterior aspect of thighs and adductor region, (3) tenderness over posterior sacro-iliac ligaments and sacro-sciatic notch, (4) limitation of motion in unilateral side bending and extreme forward bending, the latter being free with the hamstrings relaxed, (5) compression of pelvis occasionally causes pain in sacro-iliac joint.

Lumbo-Sacral—(1) Leverage from above with spine in flexion, (2) pain referred to outer side of leg, dorsum and sole of foot, (3) all lumbo-sacral motion limited, (4) compression of pelvis causes no pain.

Railway Spine—The most important points are negative findings, contradictory character of symptoms, marked degree of introspection and self pity.

ARTHRITIS AND VERTEBRAL DISEASES.

Arthritis Deformans—I shall consider together the Bechterew type, in which the spine alone is affected, and the Marie-Strumpell type in which the shoulders and hips are also involved. The disease presents all the characteristics of lame back. It is progressive, but intermittent, the patient handing himself very carefully. There are acute attacks of lumbago with flattening of the lumbar spine and some lateral deviation. When arthritis is present elsewhere in the body we naturally suspect the spine affection to be arthritis. Roentgen-ray appearances, when present, are characteristic, but negative findings do not exclude arthritis as the non-formative type may be present. The first radiographic evidence is flattening of the edges of the vertebrae where the lateral ligaments are attached. Later exostoses appear at these sites and proliferate, always pointing towards the next vertebra. The Marie-Strumpell type begins in the lumbar region and involves progressively the whole spine. It occurs in the second age period. It results in calcification of the ligaments with ankylosis of the joints, the vertebrae themselves becoming atrophic. Acute spondylitis deformans presents the same picture as the Marie-Strumpell type but the progress is much more rapid and any joint may be involved.

Infectious Arthritis—Let me first mention here that the arthritides present the same pathological manifestations in the spine as in joints elsewhere, but with the modifications we would naturally expect from the anatomy involved. We do not usually get narrowing of the joint spaces as the intervertebral discs hold the vertebrae apart. Tuberculosis is the exception. In the early stage there is destruction of the articulating processes alone. It is diagnosed usually in the second stage when

there is beginning destruction of the body with obliteration of the interspaces. There is no new bone production and in the thoracic or lumbar regions there is posterior angulation. The lateral roentgen-ray plate shows the body has become triangular in shape producing the kyphos. The posterior portion of the body and laminae are practically never involved. The disease is most prevalent in children and young adults.

In the non-tuberculous cases there is no angulation, bone production does occur, there is no obliteration of joint spaces, and the body is not as a rule involved. It may occur at any age, dependent upon the type of infection. Osteomyelitis alters both the intervertebral space and body, but occurs so rarely that I shall not enter into it.

POSTURE AND DEVELOPMENTAL ANOMALIES.

In the standing position the body is in unstable equilibrium and to maintain that equilibrium the center of gravity must lie over the base of support. Mechanically, the weight of the body is regarded as concentrated in the center of gravity. The normal attitude is that of balance and ease. Since the human skeleton is only that of the quadruped in the upright position serious defects consequently exist. I shall not enter into this in detail, but will only mention the association of visceroptosis, pot belly, round shoulders, lordosis, kyphosis and functional scoliosis with low back pain.

One of the most frequent, the most neglected, and in this connection, one of the most important ails to which the human body falls heir is foot strain. To enter into this condition would require a chapter within itself. But we should remember that it is the flat foot that causes pain, but the foot with the static error. It is the high arch that is most frequently painful. We should note particularly the presence or absence of pain and tenderness, the distribution of weight, limitation of motion particularly in dorsi-flexion and

whether or not there is marked pes vagus.

Acute Lumbo-Sacral Angle—this condition is determined by lateral roentgen-rays. An inclination of the articular surface of the first sacral vertebra of more than 42.5 degrees to the horizontal constitutes a mechanical weakness. Secondly, according to Hibbs, if the center of gravity of the trunk, approximately represented by a vertical line drawn through the center of the body of the third lumbar vertebra passes anterior to, instead of through, the body of the first sacral vertebra a mechanical weakness is present.

An abnormality of the vertebral column may frequently exist without causing pain, but whenever pain develops, particularly after an injury and the roentgen-ray shows the presence of one of certain abnormalities we may rightly place the blame there until it is proved innocent. Impinging spinous processes of the lower lumbar and sacral vertebrae, defects in closure of the posterior arch of the first sacral, incomplete sacralization of the fifth lumbar, incomplete lumbarization of the first sacral vertebra, subluxation of the fifth lumbar and spondylolisthesis are all conditions revealed by the radiographs and are all conditions capable of producing persistent low back pain.

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THE MANAGEMENT OF VESICO-VAGINAL FISTULAE.*

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NEW ORLEANS.

Successes in the management of vesico-vaginal fistulae were sporadic and accidental until the middle of the nineteenth century, when after years of heart-breaking failure Sims and his successor Emmet, to the everlasting glory of American gynecology, removed this curse of womankind from the category of incurable conditions. Other notable contributions have since been made, particularly by Mackenrodt and by Ward, and its treatment is now established on definite principles. An entirely casual reading of the recent literature, however, makes me wonder whether these principles are fully comprehended. Certainly they are not being practiced routinely if one is to judge by the numerous very bizarre procedures reported for the repair of this type of fistula, and attempted, one must conclude, before established methods have at least been given a chance to fail.

On the surface, operation for vesico-vaginal fistula seems a fairly simple thing, little more than "Here is a hole, let us sew it up." But, unfortunately, the actual difficulties are many and the simplicity is purely superficial. It is true that modern obstetrics, by preventing neglected labors, has reduced the incidence of obstetric fistulae, and such reports as that of Bey, from Cairo, in which the majority of the 276 cases were due to pressure of the presenting part, are most unusual today. The prompt application of forceps, as Sims long ago pointed out, prevents fistulae, it does not cause them, and though recent reports of their occurrence after the use of the Keil-land forceps are disturbing, the principle is unaltered. On the other hand, the percentage of postoperative fistulae is increasing, partly because more pelvic surgery is being done, partly, I regret to say, because the

occasional operator is doing more work. In addition, the use of the cautery and of radium in the treatment of pelvic malignancy has brought into existence a third type, while spontaneous fistulae from vesical stones, ulceration, syphilis and similar causes are still occasional possibilities.

Each fistula presents its own problems, but all of them present certain common difficulties. In every instance operation must be done in what, for all practical purposes, is a body cavity, and one in which visibility is poor, access often difficult, and manipulation correspondingly awkward. This is especially true in postoperative fistulae, which are usually situated high, and which, like post-irradiation fistulae, are quite often exhibited in virgins. Access may be complicated, too, by the existence of adhesions. Again, the work must be done in a field which has been constantly wet by urine, and often infected urine at that. Moreover, we may be hampered by hemorrhage, which at times may be extreme, and, because of the limited access, quite difficult to control. I might add, though, that for my own part, trying as I know it may be, I consider free bleeding a really hopeful sign, for at least I know that I am not wasting my efforts placing sutures in devitalized tissues, in which healing cannot be expected. Finally, even in simple fistulae there may be an abundance of scar tissue, which, if the injury is due to irradiation or cauterization, may be extremely tough and unyielding, and in which the lines of cleavage may be entirely effaced. Frequently this scar tissue has been increased by previous attempts at closure—I have myself operated on women who have had as many as fifteen previous operations—and a vicious circle may be established in which with each attempt at closure more tissue slough occurs.

The surface simplicity of the operation, therefore, is plainly most unfortunate, for it betrays inexperienced surgeons into attempting it. As a matter of fact, as Frank points out, no gynecologic surgery requires a longer apprenticeship. This is

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no operation for a tyro, and the inexperienced surgeon who undertakes it should do so only after due consideration of its difficulties and only after due realization of the fact that his failure may make his successor's task the more difficult.

The details of technic are not the most important points in the management of vesicovaginal fistulae. The underlying principles are far more vital to success. In the first place, nothing is possible without visibility and accessibility. The knee-chest position has certain advantages, but its disadvantages are readily apparent, and Frank condemns both it and the Sims position on the ground that they tend to increase the distance between the fistula and the vulvar orifice, and so defeat their own purpose. I think he is correct in his contention, and I find that the lithotomy position, aided by a Sims speculum and a good light—you will forgive my mentioning so obvious a necessity—usually permits excellent exposure.

Accessibility has been made much easier in most cases since Mackenrodt suggested separation of the structures, and Ward has adapted the method to postoperative fistulae, most of which are located high in the fornix, by an extensive dissection of this sort, plus the use of deep longitudinal and lateral vaginal incisions. Kelly many years ago proposed opening the peritoneal cavity from below, but Ward and others hold that incision and ligation of the broad ligaments, while it may be a factor of safety as regards the ureters, should be reserved for exceptional cases because of the chance that infected urine may escape into the abdominal cavity. Whatever the method, the point is to note that accessibility is based upon wide separation of the structures. Once this is done, the bladder can usually be promptly displaced downward, possibly aided by traction on the cervix, or, if necessary, by release of adhesions above the vault. This, for all practical purposes, amounts to opening the uter-vesical space and mobilizing the intraperitoneal portion of the bladder.

The second principle in the treatment of these fistulae is separate suture of the bladder and vagina. Only the smallest types are suitable for joint suture. Unless the mucous membrane of each structure is inverted into that structure, they are bound to grow together again and the communication is bound to reform. Also, as Kelly points out, healing cannot be expected if two tissues with active function in opposite directions are united; by the laws of physics they are bound to pull away from each other. If the bladder and vagina can be sutured in different planes this is an added advantage, but I do not regard the point as of extreme importance.

Third is the question of suture material. Catgut, silk, linen and silver wire all have their places, though many object to the use of silk and linen on the ground that it favors the formation of stones. Small chromic is best for the bladder suture. Silver wire, in contradiction of the surgical maxim that metallic sutures must not be used in movable tissues, gives excellent results. It is always sterile, it cannot be contaminated as can absorbable suture material, it has a definitely bactericidal effect, it serves as a splint, and, most important of all to my mind, it does not tear through the tissues. I prefer to secure it in place by small shots rather than by knots.

Finally, preoperative and postoperative treatment have much to do with success or failure. Too early operation is unwise, both because spontaneous healing may occur in the most unlikely cases, and because, in obstetric fistulae, full involution of the genital tract must have occurred before proper approximation of the parts can be achieved. In infected cases sufficient time must be allowed for the exudate to absorb, though cleancut operative fistulae of course demand less time than do those due to sloughing and necrosis. I need scarcely add that in dealing with pelvic malignancy one must be quite certain that the malignant process is definitely arrested before the unfortunate

woman is submitted to unnecessary and futile surgery.

During this period of preparation the utmost cleanliness is essential. Vulvar pads are to be avoided as they increase the local irritation. Hot sitz baths, vaginal douches and bladder irrigations add to the patient's comfort and have a healing effect. The pubic hair is kept shaved or clipped, and soothing ointments and occasional applications of nitrate of silver will hasten the healing of excoriated areas on the vulva and vagina. Fluids are taken copiously, and the urine is kept acid and free from bacteria by the proper agents. Bladder and kidney complications must be ruled out, and cystoscopy is often necessary to identify the insertion of the ureters in relation to the injury.

As to postoperative treatment, I am still in favor, in spite of all the arguments against it, of the indwelling catheter, and I prefer the block tin type devised by Sims, because it is less likely to slip out or to corrode than the more modern types. If it should slip out, I would caution you to reinsert it yourself. I recently had a most embarrassing failure because my interne took it upon himself to replace a catheter which had slipped out, and damaged the suture line in his manipulations. I learned my lesson, and I now have a standing order on my service that all such accidents must be reported to me at once. It is my custom to keep the catheter in place for a minimum of ten days at least, this being longer than is usually advised. If the patient voids voluntarily, as is quite possible, one must be sure that the bladder capacity and the amount of urine correspond. The bowels are kept open by mild laxatives and low enemata, constipation being sedulously guarded against. It is imperative that the patient remain in bed for two weeks or longer, as too early movement may ruin an operation, while prolonged rest may turn an apparent failure into success. Coitus should be strictly interdicted for at least two months.

To revert to the use of the catheter as a postoperative measure, Sturmdorf is opposed to it on the ground that it is physiologically incorrect, since the floor of the bladder, the usual site of fistulous lesions, is a fixed structure which does not need supplemental immobilization. He claims also that for mechanical reasons the catheter actually does harm, in that it tends to aspirate the bladder mucosa into it, while only the upper level of the residual urine is drained off. I grant the logic of his arguments, but I still question the wisdom of routine catheterization, which obviously may cause infection, and which, because of the necessary manipulations, may damage the suture line.

Surgical measures, as Frank points out, may be divided into four groups, the Sims denudation of the edges, which is now limited to small fistulae; the flap-splitting or bladder-mobilization method; the combined laparotomy and vaginal method; and the miscellaneous group in which the hole in the bladder is stopped by the interposition of some other structure. I cannot emphasize too strongly that the combined laparotomy and vaginal technic is not for general use. It should be limited to fistulae high in the fornix and fixed by scar tissue, and unless it is combined with the proper dissection from the vaginal side, the laparotomy approach gives no advantage whatever. The introduction of this method has had at least one unfortunate result, in that, because superficially it makes access easier, it has thrown the field open to surgeons inexperienced in pelvic work, who do not always remember that any abdominal incision introduces an element of risk which vaginal operations do not generally possess. I would caution you also that if any portion of the uterus or cervix is used in the interposition technic, women in the childbearing age must be sterilized, for intractable dystocia will result if pregnancy should occur. The use of these structures, or of fascia lata flaps or flaps from the labia, is obviously adapted only to the occasional case in which other methods have failed, and it

is equally clear, both theoretically and actually, that the flap-splitting, bladder-mobilization method gives most uniformly satisfactory results and is most generally applicable.

It is highly important that the sutures be placed without tension, and this is usually possible if the bladder has been properly mobilized. In the rare instances in which it is not possible, it is better to close the fistula in several stages than to risk sloughing of the tissues and the formation of further scar tissue by reduction of the circulation. In doubtful cases it is a good plan to leave the vaginal wall, in which most of the tension occurs, entirely open after closure of the bladder injury. The exposed area is kept dry with aristol or some similar drying agent, and it is surprising to see how rapidly the space is filled in by granulation.

My own preference is for some form of general anesthesia, but Bey reports the operation of all his cases under stovain, the special advantage of this form of analgesia being that it permits depression of the posterior vaginal canal, and so obviates the necessity for the Schuchardt incision. His point seems well taken, and while I am opposed to stovain because I question its safety, it may be that with spinocain, whose diffusion can be controlled, safety and expediency may be combined.

Very small fistulae are occasionally cured by diathermy, and since the method does not harm, it may be tried if the facilities are at hand. Colpocleisis I mention only to condemn. There is no place for this entirely unanatomic and unphysiologic procedure today, though it may once have been a necessary evil. Bey, who used it in five of his cases, has no good word for it, stating that it tends to cause cystitis, pyelitis and calculi, and, if the uterus has not been removed, septic metritis. Hoffman of Persia employed it in a young girl, married and delivered at thirteen, with a hideous bladder defect, because he did not possess the necessary equipment and assistance for transplanting the ureters into the bowel. Two

further operations were necessary immediately, and an extensive pelvic operation was necessary seven years later, and even final success does not encourage one to risk the duplication of such a history.

It is the type of fistula in which, in an earlier day, only colpocleisis was possible, for which implantation of the ureters into the sigmoid is now the accepted procedure. No vesicovaginal fistula should be considered hopeless as long as the vesical sphincter can be repaired—and careful dissection will often yield astonishingly brilliant results—but plastic surgery, no matter how skillful, cannot recreate muscle, and there are many instances in which the sphincter is gone and the bladder floor is wholly or partially destroyed. Formerly the implantation operation carried a high primary mortality and an almost inevitable later morbidity due to ascending renal infection. Now, thanks to the technic devised by Coffey, it is a practical procedure, and it is as safe as such an extensive operation can be. Of course it carries the risk inevitable in all intestinal surgery, but the danger has been reduced to the lowest possible terms, and one is justified in proposing the operation to the wretched women whose lives otherwise would be living deaths.

CONCLUSIONS.

1. The principles of the cure of vesicovaginal fistulae are established, but they are not being practiced routinely.

2. Operation, while superficially simple, actually may be extremely difficult, because of limited access, infection, free bleeding and abundance of scar tissue, and it is therefore never a procedure for a tyro to undertake.

3. The principles upon which success is based include visibility and accessibility, separate suture of the structure, selection of the proper suture material, and careful preoperative and postoperative treatment.

4. The principal operative procedures include the denudation method, the flap-

splitting and bladder-mobilization method, the combined laparotomy and vaginal method, and the substitution or interposition method. Of these the flap-splitting method is most generally applicable and most uniformly successful.

5. Colpocleisis has no place in modern surgery. In those cases in which the destruction of the bladder and urethra is too extreme to permit the employment of any of the standard methods, transplantation of the ureters into the sigmoid by the method of Coffey is a justifiable procedure in spite of its irreducible minimum of risk.

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DIAGNOSIS AND TREATMENT OF BLADDER TUMORS.*

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I do not hope to present anything new in regard to bladder tumors but want to stress the necessity of an early diagnosis, as the patient can often be relieved of this disease before its ravages have involved too much of the bladder, the adjacent organs, and placed the afflicted person in an incurable state.

When a patient consults his physician on account of hematuria, disturbance of urination, such as frequency, dysuria, polyuria, retention and incontinence, one should immediately think of bladder pathology. There may also be loss of weight, pain in perineum and legs, when the disease has advanced to an inoperable stage.

The symptom of hematuria appears early in most cases of tumor of the bladder, and the attending physician should advise a thorough urological examination, for in their early recognition and prompt appropriate treatment of bladder growths lies the solution of cure of carcinoma of the bladder.

With a patient presenting the above symptoms a cystoscopic examination should be done. If the symptoms are due to a tumor the examination will reveal its presence, character and location. Bleeding may be so profuse that a clear cystoscopic examination cannot be made, and it will be necessary to irrigate the bladder with a solution containing adrenalin, or the hemorrhage may be controlled for the time being by irrigation with a warm antiseptic solution such as boracic acid. In case the above fails to clear the bladder of the blood, it may be necessary to defer the examination, and have the patient confined to bed, as this will aid in checking the hemorrhage.

It is very necessary that a piece of the growth be removed with the cystoscopic forceps, and a microscopic examination made of same in order to determine whether the growth is benign or malignant. In the presence of a cystitis the tumor may be necrotic or the urinary salts may be deposited upon the growth giving the appearance of an advanced malignancy.

Care should be taken not to mistake a blood clot fastened to the bladder wall, or an incrustation on an ulcer for new growth. The size of the tumor may make it difficult to determine upon cystoscopic examination, how far the condition has advanced. In such a case cystogram may be of some value in determining the degree of extension. In making the cystogram the bladder should be free of all blood clot as the filling defect made by the clots may be confusing.

Tumors of the bladder are usually classified as benign papilloma, malignant papilloma, papillary carcinoma and carcino-

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ma. It is hard to make distinction in the last three types. All bladder tumors should be considered potentially malignant and classified according to the degree of malignancy, on a basis of one to four according to classification of the Mayo Clinic.

Broders claims that a neoplasm may accomplish only what its cells can accomplish. If its cells are very active the tumor will be very active and consequently more malignant. A papilloma may be of a low degree of malignancy or it may be of a high degree of malignancy. It may be flat and ulcerated and of low degree malignancy or of high degree malignancy. Consequently grading of the degree of malignancy depends upon the undifferentiation of cells in a growth. If three-fourths of the tumor is composed of differentiated epithelium and the other fourth of undifferentiated epithelium it is grade one. If the differentiated and undifferentiated cells are equal it is grade two. If the undifferentiated epithelium composes three-fourths of the growth it is grade three. If there is no tendency toward differentiation of cells it is grade four. Tumors of the first and second grades are usually pedunculated, and tumors of the third and fourth grades are usually flat and infiltrating the bladder wall.

Having determined the degree of malignancy one can then decide what form of treatment will be appropriate. The location of the tumor, its size, the general physical condition of the patient will also have its bearing upon the type of treatment to be employed.

The small papilloma is best treated by some method through the cystoscope. Either by electro-coagulation or chemo-coagulation. The electro-coagulation method is preferable and will give the best results. The electrode is placed through the sheath of the operating cystoscope and the end of the electrode is put directly on the growth. Its pedicle should be burnt first and then the body of the tumor. It will

be necessary at times to withdraw the electrode and clean it of the adherent growth. The patient has little or no pain while the growth is being burnt, but will suffer some pain when you approach the bladder wall, and it may then be necessary to reduce the current. This treatment may have to be done several times before the growth is destroyed, and if the tumor does not show a tendency to be destroyed by this method it is best to do a supra-public cystotomy and excise the tumor with some form of cautery. This method of treatment is not without complications, as bleeding when the slough is passed is often slight, but may be profuse and alarming, at times so much so that the bladder has to be opened to control it. Calcareous encrustations may form before it sloughs and it may be necessary to remove the encrustations with the cystoscopic forceps.

Chemo-coagulation is applied by introducing a catheter through the cystoscope and applying trichloroacetic acid to the growth.

If the growth is an extensive papilloma or the tumor is very large especially those occupying the base of the bladder or trigone, it is better to do a supra-public operation and destroy the growth by actual cautery, snare or fulguration and application of radium. There is a great tendency for transplantation of the growth to healthy bladder wall and the abdominal wound and it is necessary to protect same, and when the tumor is removed absolute alcohol may be applied. Diathermy seems to offer as good results as radium and is freer from distressing results such as pain and stranguary. Deep roentgen-ray is also used in this condition. Cystectomy may be done in these cases, transplanting the ureter into the bowel or skin.

If the moderate sized tumor is in such an unfavorable location as to make its surgical removal hazardous, massive coagulation through the open bladder should be used as recommended by Corbus. By unfavorable location we mean involvement of one or both ureters, particularly both,

those involving the neck of the bladder and most of the base. If the growth is large or moderate in size and situated on the bladder vault or lateral walls, surgery is the method of choice, and the growth should be removed by cautery, excision or partial cystectomy, preferably the latter.

CASE REPORTS.

1. H. B., male, aged 32 years, consulted us for hematuria, duration two months, also complained of some difficulty in voiding at times, sudden stoppage of the urinary flow, frequency. Physical examination was negative. Upon cystoscopic examination a small papilloma was seen on the trigone near the right ureteral opening. This patient was treated through the cystoscope by electro coagulation. This was two years ago and there has been no recurrence.

Case 2. Male, aged 60 years. This case illustrates the futility of palliative treatment. This patient consulted us because he was unable to void. He gave a history of bleeding for three years, at first slight but later very profuse. Marked dysuria and frequency. Physical examination;—patient frail and anemic. Examination of chest negative. Heart, mitral murmur, slight degree arteriosclerosis. Blood pressure 140/70. Marked soreness and tenderness over urinary bladder. Cystoscopic examination revealed a growth involving practically the entire trigone and both ureters. The bladder was opened supra-pubically, the growth cauterized. Patient was relieved for one year then had a recurrence, and refused to have anything further done, as he expressed it, he had waited too long to obtain any relief.

Case 3. Male, aged 50 years. This case represents a growth of moderate size. This man came to us with a history of having been recently treated for stricture of the urethra. Gave a history of hematuria for four months, frequency and dysuria. He was advised to have cystoscopic examination which revealed a tumor about the size of thumb on the bladder wall above the right ureter. This was treated by opening the bladder supra-pubically and the tumor removed by excision with cautery. This was a year ago last January and there has been no recurrence.

DISCUSSION.

Dr. Sanderson (Vicksburg): My experience in bladder tumors would not warrant my going into a minute discussion of Dr. Gamble's paper. However, I should like to say that I thoroughly enjoyed the paper, and I think repeated cystoscopy is something that should be taken into consideration.

The only other point that I could mention is one that is advocated by Dr. Frontz of the Radiological Institute, who, when fulgurating, insists on the

use of the unipolar in place of the bipolar, stating that the results are better and that the danger, even in the hands of very inexperienced men, is much less than with the use of the bipolar; he himself having punctured a bladder at one time.

Dr. E. H. Linfield (Gulfport): The doctor is certainly correct in saying that early diagnosis should be made. Those of you who have cases of hematuria coming to you should look on them with utmost seriousness, because hematuria, originating from any source at all, can be very serious, and some are more serious than others. If you are not capable to look in that bladder and make a complete investigation, you should send the patient to a man who can, as there is a possibility of picking up some potential malignancy that can be nipped in the bud right away.

When you do find a papilloma or any neoplasm of the bladder and after you have cleared up that disturbance, it might be a good plan to investigate the kidney, because it is not unusual that you will find a papillomatous growth in the pelvis of the kidney, and a transplantation takes place by some of the cells floating down and transplanting themselves on the bladder mucosa.

I want to take exception to one point made by the doctor. He stated that in fulgurating these tumors he burns the base first and then the body of the tumor. I believe that Dr. McCarthy, at the Post-Graduate Hospital in New York, suggests that we start at the distal end of the tumor first and burn toward the base, because in doing so you minimize the danger of cutting off a little piece of tumor that may have live cells which could become transplanted if you accidentally missed them.

The trigon is the fixed part of the bladder. The rest of the bladder is elastic and you can excise tumors of that part of the bladder other than on the trigon. It is possible to excise some on the trigon, but I believe electro-therapy is indicated in those cases. Doctor, your paper was fine and thoroughly enjoyed.

Dr. Paul G. Gamble (Closing): I think either the doctor misunderstood me or I said what I did not intend to say. I said to start at the top and come down, because you will get better results that way and it is easier on the patient.

I have nothing to say in closing, except that I do not want to stress again the necessity for an early diagnosis. As I said before, any of us feels mighty badly after an examination has been made of a patient who has suffered for three or four years with bladder trouble (and that is what they always tell you they have) to find out, when it is too late to cure the patient and you have the unpleasant feeling of telling him, that he has a cancer of the bladder and that he should go home and make arrangements to get things fixed up for his family later on.

TRANSFUSION.*

CHAILLÉ JAMISON, M. D.,

NEW ORLEANS.

The transfusion of blood need no longer be defended as a procedure of practical clinical application and of great therapeutic value in many medical and surgical conditions; the advocates of transfusion are now in a position to state boldly its value and to urge its more widespread use. From most ancient times men have dreamed of the beneficent effects which should result from the administration of the "vital fluid" of the young and healthy into the veins of the sick, the wounded and the aged. Thus we find that many references are made to the transfusion of blood in the writings of the ancient Egyptians, who reserved the method for the healing of their princes; it was well known to the old Greeks and Romans, but was condemned by both Pliny and Celsus, though it seems to have been practiced in the Augustan era. During the middle ages the physicians, the poets, and the philosophers considered it an infallible cure for that most terrible of all diseases—OLD AGE. It promised to the aged regeneration, "the fountain of youth." It was thus that the attempt was permitted to rejuvenate the waning physical and mental powers of the aged Pope Innocent VIII in 1492: in this case three young boys were bled to death and the blood thus obtained administered to the patient, though it is not known that it was actually surgically introduced. This famous case resulted in no good to the distinguished patient, and the opponents of transfusion were in the ascendancy for many years thereafter. Harvey's researches on the circulation in 1628 stimulated new and more successful attempts to rehabilitate the operation of blood transfusion, though it is in this year that Colle mentions the procedure as an old one, which he con-

demns. The first authentic successful transfusion of blood in animals was by Richard Lower at Oxford, in 1664 and, in man was by Jean Denis on June 15, 1667, in France. It is interesting to note that these early transfusions were not from man to man, but were from sheep to man and also that the patients were much benefited and that apparently no reactions of a serious nature resulted. Claud Tardy, of the Faculty of Medicine, Paris, wrote the first book on transfusion in 1667 and reasoned that this operation should work better on man than in animals, and considered it both more convenient and less dangerous to do the vein to vein rather than the artery to vein operation. He indicted the technic and presupposed that the donor would not give an amount of blood so great as to injure him. While recognizing animals as donors he suggested that humans were better. About this time two scientific groups arose, one violently opposed to the other, who heatedly discussed this question. The climax came when Denis, who lead the small group of transfusers, was involved in litigation over the death of a man that followed a few hours after a transfusion, and through Denis was exonerated, this was made the excuse for the edict of Chatelet which outlawed the practice of transfusion on man without the approval of the Faculty of Medicine of Paris. For well over a hundred years following this time transfusion fell into disrepute and practically is unmentioned in the literature of the seventeenth century. It was not until 1818 when Blundell, a surgeon, was stimulated, through the loss of a case from uterine hemorrhage, to extensive experiments on dogs which resulted in the serious promulgation of the probable efficacy of the transfusion of blood in hemorrhage. Blundell's long series of experiments on dogs was followed by nine human transfusions, which gave the very satisfactory result of six cures in desperate cases. The main contributions which resulted from this work were; the

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ease, convenience and safety of syringe transfusion without making the blood insufficient for vital function, and the life saving efficiency of a quantity of blood for transfusion smaller than that lost in the hemorrhage. It is extremely interesting that in 1853, even though there is no record of a transfusion having been done in this country, a committee appointed to investigate the operation of transfusion reported to the Fourth Annual Meeting of the Louisiana State Medical Society recommending the adoption of Blundell's syringe technic.

In spite of this however, only about a dozen human transfusions were done in this country up to the present century and blood transfusion continued to be a novelty without general acceptance or use. With the beginning of the twentieth century came the recognition of isoagglutination and the incompatibility of human bloods, which was destined to bring about the consummation of that dream of long ago and to allow the free and safe mingling of the blood of one human with another. It is to Moss that we owe our present knowledge of the four groups into which all humans fall, and that those of the same group may safely receive blood from one another. It is recognized at the present time however, that blood should never be given until the serum of the recipient has been shown to contain no agglutinins for the blood of the donor; as this is a very simple laboratory test, which can be performed in a few minutes, and is much easier than finding the "groups" to which the donor and recipient belong, it has tended to simplification of selection of the proper donor. It is this knowledge that has made transfusion entirely safe. It is not necessary, except in very rare cases, to know that the sera of the donor is compatible with that of the recipient or that it agglutinates the recipient's corpuscles, though it is recognized that these facts may occasionally cause slight reactions of little importance.

It is also known that incompatibilities of the white cells exists, but that such incompatibilities cause no trouble.

What is the length of life of the transfused cells? Do such cells perform their function? The latter question can be answered positively in the affirmative, at least for the more important functions of oxygen and carbon-dioxide carrying, because of the complete restoration of these phenomena in exsanguinated men and animals following the transfusion of blood. The answer to the former question is much more complex but the investigations of many different observers seems to point to a survival of the donated corpuscles for from 80 to over 100 days, but "the variables are so numerous and the problems so complicated that the length of the functional life of the red blood cells may be considered to range within wide physiological as well as pathological limits, subject to an interplay of many diverse influences". So far as actual practice is concerned this question might interest us because its correct answer would indicate when the transfusion should be repeated: as a matter of fact, however, this is answered quite perfectly by counting the patient's red cells, though it, of course, does not take into consideration regeneration of cells.

As soon as it was shown that blood could be safely transferred from one individual to another, and that its therapeutic properties were great and more or less lasting, the method of such transfer became the subject of great and immediate interest. The outbreak of the World War, at about this time, with the innumerable cases of shock and hemorrhage occurring in the wounded gave an added and very acute impulse to the problem. Every method of transfusion now in use, is followed by occasional reactions, which may be mild, severe, and in extremely rare cases fatal; some methods are much more likely to be followed by reactions than others. The number of procedures is al-

most as great as the number of transfusers, each advocating his own method or instrument. It is safe to say that the essentials of every technic are the assured delivery of a known amount of nonhemolysed, uncoagulated blood to the recipient. The *modus operandi* should depend upon the circumstances of the individual case—the condition of the patient, the circumstances under which the transfusion must be performed, and last, but not by any means least, the method with which the operator is most familiar an adept. This important and practical problem may be best approached by the consideration of the four fundamental principles: (1) Direct or immediate transfusion from vein to vein, or from artery to vein, with or without the use of a cannula; methods based on this principle are now obsolete and only of historical interest: (2) Indirect or mediate transfusion, by the use of special syringes or parrifined tubes, with or without anticoagulants; these are the modern methods, which have been used over a long enough period, so widely and so successfully, as to arrest attention and study; (3) Auto-transfusion, by which is meant the reintroduction into the veins of the patient of blood recovered from the pleural or peritoneal cavities following recent hemorrhage into such cavities; inasmuch as such cases are rare, and only encountered by the surgeon, this method may be dismissed as unimportant, though it should be born in mind that blood so obtained is only fit for reintroduction when it is known to be uncontaminated and after it has been carefully filtered through several thicknesses of gauze: (4) Intraperitoneal transfusion, which is the unquestioned method of choice in very young children; it seems that blood introduced in this manner is fairly rapidly absorbed in an unaltered state and retains many of its functions.

The question of methods then, at least so far as applies to the adult, may be answered by the statement that indirect

transfusion is the method of choice, either with or without the use of anticoagulants. This merely narrows the question down and does not fully answer it. So far as the use of an anti-coagulant is concerned, only one need be considered, and that is sodium citrate: by the use of this chemical those reactions which lead to coagulation are arrested permanently, provided a sufficient amount comes in contact with the blood immediately upon its release from a vein, this is brought about by puncturing a vein with a large bore needle and allowing the blood to flow into a receptacle containing a suitable solution of the citrate, or by aspirating blood into a syringe containing such a solution. The citrated blood is then introduced into the veins of the recipient by gravity or other suitable technic. This is known as the Citrate Method which is very popular and the use of which is very widespread; this popularity is due to many different factors, the advantage of some of which cannot be denied; it is easy and certain, no trained help is required, but its greatest and at times inestimable advantage over all other methods is that as soon as the blood is thoroughly in contact with the anticoagulant it remains unchanged and its use may be delayed for hours or it may perfectly safely be transported for long distances, which means that it is not necessary for the donor and the recipient to be at the same place at the same time; the obvious advantage of this fact often makes this the only feasible procedure.

It is unfortunate that this method has certain inherent disadvantages and definite contraindications to its use in some diseases. There is no doubt that reactions following the introduction of citrated blood are far commoner than with whole blood and may be expected in about 40 percent of cases; it is my experience, however, that such reactions are not of a severe nature and may be minimized by very careful technic. Though such reactions are usually not marked enough to

serve as a contraindication even in very sick or weak patients, their frequency and occasional severity make other methods much more desirable when their availability is equal. There seems to be no question that citrate definitely injures the platelets and completely inhibits the action of those of the donated blood, which, at least theoretically, forbids its use in purpura; this fact suggest, at least, that in other of the blood dyscrasias, where there is a tendency to bleed that citrated blood is not desirable. On theoretical grounds, it would appear that blood untreated by chemicals, by contact with air, by stirring, or prolonged contact with glass-ware, or steel, should certainly be less altered and therefore be better able to function normally and be less productive of reactions. Such is the case with the indirect transfusion of whole blood by any of the better known methods, certain of these fulfilling theoretical requirements better than others. It must be remembered that the indirect transfusion of whole blood is much more technical than the citrated, and far more uncertain and that the instrument selected is usually costly and requires much care, and that when reactions do occur they are likely to be for more severe. In general, it may be said that procedures which require much help, elaborate preparation of instruments or the routine surgical exposure of veins are not of much value, at least in medical practice.

The reactions following transfusion are of varied type. There may be slight headache, malaise, urticaria, slight fever, chills and high fever, appreciable hemolysis with hemoglobinuria, acute anaphylactic shock, etc. The most frequent noteworthy reaction is a rise of temperature and a chill. A sudden pain in the back developing in the course of transfusion is a danger signal not to be ignored and demands prompt cessation of the procedure, because this symptom usually means that the blood is incompatible—

Indications: Shock and hemorrhage—before and after surgery.

Anemia, secondary to hemorrhage—

Infections—Acute, etc.—Erysipelas.

Leukemias.

Hemorrhagic diseases.

Chronic diseases.

Old age—Do not delay.

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DISCUSSION.

Dr. Maurice Gelpi (New Orleans): I am sure that you have all enjoyed Dr. Jamison's splendid paper as much as I have.

While the question of transfusion goes back almost—well actually—to antiquity, as Dr. Jamison has shown us, attention has been called to the fact that the development of the methods in common use today is modern. There are certain high lights which are stepping-stones, so to speak, to the modern method of transfusion. The first one is the work of Lohr of Oxford in 1860, mentioned by Dr. Jamison, consisting of the successful transfusion of blood from dog to dog. Following this, about 1662, Sir Christopher Wren successfully transfused blood of a sheep to a human individual. Following this was the next stepping-stone, transfusion of defibrinated blood as performed by Bishop. While this work was not altogether satisfactory, it appears to be a step forward in the right direction. This was in 1835. But Crile in 1898, was the real one who stimulated great interest by transfusion of human blood to humans by his direct method. Undoubtedly, also, the material furnished by the World War stimulated the use of transfusion more than ever before.

The usual indications for transfusion are: hemorrhage, first of all, under which might be included, hemophilia and purpura; next is pernicious anemia and leukemia; next is carbon monoxide poisoning; and last, sepsis or septicaemia.

In acute hemorrhage no one can witness the marvelous transformation that takes place in an individual upon transfusion striking from a therapeutic standpoint. In any type of acute hemorrhage, the results are splendid, provided the

patient has not already bled too much. With hemophilia, the results may not be quite so remarkable and so brilliant, but are quite satisfactory, nevertheless. In pernicious anemia, except as preparatory measure for splenectomy, and perhaps to prolong life, the results are not altogether satisfactory.

In carbon monoxide poisoning, indications for transfusion are rather clear and the results good.

In sepsis or septicemia, there are still some that believe that even in acute sepsis the indication is to transfuse. My opinion is that the method is of no value, but might even cause trouble and be a source of danger. My own experience, although limited only to citrated blood, is that results have been most unsatisfactory. This refers to acute sepsis only, to bacteremia. It might be of some value for the secondary anemia of chronic sepsis.

As regards methods, while the paper does not lay stress upon methods, it is difficult to talk about transfusion and not say something on this subject. The development of transfusion has come to the point where it has reached the utmost simplicity. That always appeals to me. The older I get the more inclined I am to select a simple method that produces the same results as a complicated method. Therefore, the citrate method appeals to me, and the method from donor to recipient by means of syringe, appeals to me also. The two essentials for transfusion therefore are always available, a simple method and blood. Well appointed hospitals always make provisions for donors and besides we can always get a volunteer donor. On account of the dramatic phase of this work, people are always ready to give blood. If I may be forgiven a little levity, I will illustrate by a story some of you may have read in a recent *A. M. A. Journal*. It seems that a doctor walked into a club room where there were a number of men and said: "Gentlemen, I have next door a very sick man. I need only one thing, but I need that very badly. It must be pure. It must be wholesome. I need only one quart—" One man jumped up: "Doctor, I will give it to you!" When they walked into where the patient was, the volunteer began to disrobe. "Why are you doing that?" asked the doctor. "Did you not ask for a quart of pure blood?" "Why no" said the doctor, "I merely wished a quart of whiskey." "Why," exclaimed the man, "Do you think I would give my good whiskey to a man I have never seen before?" "I thought you wanted blood." This illustrates the ease of obtaining blood and incidentally the difficulty of obtaining good whiskey.

But seriously, we have always at our command the necessary simplicity of method and the avail-

able blood, therefore, under these circumstances, there is no reason why today, any individual should suffer for lack of transfusion.

Dr. Adolph Jacobs (New Orleans): Just a few words concerning the amount of blood to be given in transfusion.

Dr. Landry mentioned he had given 200 cc. with practically no reaction and on the other hand about two weeks later, 500 cc. and the patient died—probably with acute dilation of the heart.

I mention this particularly in cases of septicemia where the myocardium has become so weakened by toxins, that it cannot take care of such a large load at one time. It is better to give small quantities and repeat as frequently as necessary.

Dr. H. W. E. Walther (New Orleans): I prefer rather to align myself with those who look upon things with a suspicious or questioning attitude. I rather, from my own personal experience, feel more keenly the reactions that are noted where we fail to match bloods as well as type them. I have never had any experience of fatality in transfusing and in the last few years I have used it routinely, immediately following operations on the aged in urinary surgery, with very excellent and happy results.

It has been brought out here, but I would like to stress the point about the alarming reactions that sometimes are met with where the bloods are not matched as well as typed. In some of our institutions here we have members of the interne and externe staff and medical students who are placed on a donor list and they are all typed and are supposed to match with the patient. I have, on several occasions, to my great embarrassment, used typed bloods without matching them and seen my patients have chills (unfortunately sometimes in front of the family) that last an hour to an hour and a half. It is quite alarming to see the patient have one of these chills and then fever to 105° and 106°. I had one case recently go up to 107°, where the blood had not been matched, and personally, where I am concerned, I do not feel as though I want to use a donor that does not match as well as type to my patient. I have never used citrated blood; all of my work has been with whole blood given with the Head apparatus which is simplicity itself.

Dr. E. H. Walet (New Orleans): About using the same donor twice: I recently had a lady on whom I had to do a hysterectomy on account of submucous fibroid, expelled in vagina, and involution of the uterus. A relative of hers was used. Dr. Bayon administered two transfusions

by a simple direct method: The first a week before the operation, the second after operation. The transfusions were 400 cc. and 500 cc. respectively. She showed absolutely no disagreeable symptoms.

Dr. King: How far apart were the transfusions?

Dr. Walet: Within three weeks.

Dr. E. C. Faust (New Orleans): A great deal has been said here about blood groups and transfusions. I am wondering whether attention has been given to the possibility of having a latent infection of malaria in the blood transfused. I know of a number of patients in which that was the case, in which the blood of the donor had been found to be compatible in every respect, but where examination of the blood was not made microscopically before transfusion. It was not discovered until afterwards that the donor's blood had a small number of malarial plasmodia which, to the patient who received the blood was a rather serious consequence. In a few days he had a very large number of malarial parasites in his blood. So it seems to me this is an important point to consider. The same precaution obtains, of course, with respect to relapsing fever and other spirochetes carried in the blood streams.

Dr. Jerome Landry (New Orleans): There is one thing I would like to bring out about transfusions; first I want to endorse what Dr. Johns has said about blood matching.

The absolute necessity of matching blood is borne out by a case I had recently. I had a very prominent clergyman from the country, suffering with pernicious anemia which necessitated blood transfusions. We used the interne, who was a universal donor, and the patient fell in group compatible with the donor. I used about 200 cc. of this blood. About two weeks afterwards we transfused this man again and took 500 cc. blood from same donor without matching, in about an hour after back in bed he had a severe chill and complained of severe pain in epigastrium and back, with a constant desire to go to stool. In the course of an hour he was dead.

I bring this case up to show that transfusions are not without danger and the necessity for matching blood because I feel that this accident might not have occurred if these two bloods had matched.

Again recently I had occasion to transfuse a lady and while we found her proper group, it took fifteen different individuals before we could match this lady's blood.

Another point I would like to bring out is the time to transfuse a patient is when this idea comes to you: "Does this patient need transfusion?"

Dr. F. M. Johns (New Orleans): I have greatly appreciated Dr. Jamison's very comprehensive paper and I would like to further emphasize the appeal for what I know Dr. Jamison upholds—that is, whole blood transfusion.

Citrate undoubtedly damages the blood cells and completely destroys the complement. Not only does it destroy the complement, but it also seriously affects the patient. I have had occasion recently on two instances to withdraw blood an hour following transfusion of citrated blood and observed a definite drop in the natural complement titre. This may account for some of the lack of success we have in the septic cases that Dr. Gelpi mentions.

While it is true that all people fall into four groups which make them compatible and incompatible, it is certainly wise to further directly match patient and donor.

Dr. E. L. King (New Orleans): Just one point in corroboration of what Dr. Landry has said.

We find that transfusions for peresperal septicemia have value. In those cases we use repeated small transfusions of 200 to 300 cc. blood, we have also noticed that blood from the same donor gives a reaction the second time where it has not done so the first time. Apparently some sensitization has developed in that patient, hence we make it a point not to use a donor a second time.

Dr. Peter B. Salatch (New Orleans): All agree in giving blood in hemorrhages, and should transfuse patients when they have hemorrhaged excessively, but this is not so universal in persistent oozing.

It is surprising how small an amount of blood will control—especially uterine oozing. I had a case of a young girl, probably the second time she menstruated. She had become almost exsanguinated and everything had been tried.

I gave her a transfusion, not so much to stop the oozing, because as soon as she came in I packed her, and in three hours packed her again, But I gave her a transfusion to pull her up, and to my surprise not another drop of blood did she pass. So I remember this experience every time I have this sort of oozing.

Difference between citrate blood and direct. Had occasion to use both on the same patient, a child, the citrate method occasioned a severe chill which gave some concern. I then gave her direct transfusion with absolutely no reaction, no rise in temperature and no chill. I used it on another case an adult, with the same experience.

In your citrated blood or glucose you can give a dose of morphin, which will, in most instances control the chill. If you will just drop in $\frac{1}{8}$ or $\frac{1}{4}$ grain of morphin into your solution, you will have no reaction eight out of ten times.

Dr. J. S. Hebert (New Orleans): I am sure that anyone here this evening would like to thank Dr. Jamison for presenting the subject "Transfusion" in all of its stages of development to the present day. I would like to tell Dr. Jamison that in Obstetrics we have a specific application for this life-saving operation. Severe anemias, so-called pernicious, beginning during or shortly after pregnancy, not due to obvious complications, but apparently resulting from the gravid state *per se*, are now cured by this treatment.

Larrabee, Aubertin, Esch and others have developed this important subject so that today it is a very interesting chapter in Midwifery.

In the last five years, we have observed these cases, six in number in our service at Charity Hospital and we can substantiate everything claimed by these authorities. I would like to repeat that in these cases it is a life-saving operation because I believe that unless transfusion is done these women die.

Dr. Urban Maes (New Orleans): I agree with Dr. Faust as to the importance of routine examinations of the blood, having learned the lesson from a patient with pernicious anemia. I used her brother for a donor, and, because I was in a hurry, I omitted the examination and simply asked him whether he had ever had a blood stream infection. When he denied it, I did the transfusion. Two weeks later the patient broke out with a profuse eruption, and the dermatologist whom I called in consultation made a diagnosis of lues. Her Wasserman proved to be strongly positive. At the end of six weeks of active treatment it was negative, and there was no further trouble.

I might say that this patient had a rather interesting history. I did a splenectomy on her for pernicious anemia, in the days when this condition was being treated by that method, and her blood, as Dr. Johns' repeated tests showed, remained entirely normal for four years afterward. I know of no other instance of a patient with pernicious anemia who recovered after splenectomy and remained well for a period of years except this one who was transfused with blood that carried a luetic infection.

Dr. Chaille Jamison (closing): I wish to thank the gentlemen very much for their discussion. I regret, that we did not hear more discussion of the use of transfusion in medical cases, as I am very sure that transfusion has a large place, as yet scarcely touched, in medical science.

Dr. Walther brought up the question of reactions. Now reactions at the present day occur from two causes. First of all they occur from incompatible blood, and I believe I am as qualified to speak on that as nearly anyone. The paper I read here ten years ago went into, to some extent, the methods that we used on the front of France. I had occasion there to transfuse about four hundred cases. Of course we made mistakes. We did get considerable reactions and reactions came on late. Jaundice is usual from unmatched blood.

I wish to say a word here about types, I wish I could say that if a man falls into type four he could give blood to all. This is true, but it has its exceptions. Blood should never be given to a man until there is direct typing. There may be excuses for that when you are in a great hurry. You may give blood that is perfectly compatible from donor to recipient, and in a week if you give that same blood without matching you are very likely to be giving entirely wrong blood to the recipient. It may be due to sensitization or changing, but it has been demonstrated that it does so. If you take a man whom you think lies in the group of universal donor and you give that blood, you may not give it next week but perhaps the week after, you are going to get violent reactions from incompatible blood, but it will not occur if they match perfectly.

Now Dr. Walther brought up the question of reaction he got. I can again say that that was not due to matching of blood. If he had given 500 cc. of blood that was incompatible he would not have gotten by with mere reaction. Wherever you give citrated blood you will get a reaction. I would not consider 104 degrees so very bad. Reaction might have value in some cases but it is so common as not to be noticed. It cannot be avoided. McLester (?) stated it was due to the rapidity with which the citrated blood went into the veins. If you let it go in very slowly you would not get as warm reactions. All this is true, but as I said you can minimize these reactions; there is no getting around the fact that in a large number of cases you will have a violent reaction and unless the family knows about it beforehand, it will scare you both out of your wits, but it doesn't mean anything.

You know when we are interested, we talk around and get information from all sorts of sources. I met a very well known surgeon just a week or so ago. He had been a student at the Crile Clinic and he had done transfusions at the front in France. He told one of the most interesting things, that before the days of typing, when Dr. Crile did direct artery to vein that he never got a reaction. Now this man knows what he is talking about. We have not yet gotten to the end of reaction, but I refuse to believe anyone

who will tell me that whole blood will never give reactions.

I would like to add that in pernicious anemia we find many cases who will not improve until we give transfusion. We have used transfusions very much in my service. The other day in the ward next to mine, transfusion of whole blood was given to a man with hemorrhage in typhoid and the blood apparently ran right through him. If you are dealing with large blood vessels transfusion is not good until that hemorrhage is first controlled.

I have answered Dr. Landry's question about the repeated use of the same donor—that should not be done. I have answered Dr. Bass on typing of blood, also Dr. Salatich, who has a very nice method of transfusion. I wish to thank Dr. Johns very sincerely for his observation. I should have had sense enough to know that without his bringing it to my attention again. I should know that the minute citrate touches the blood it destroys the complement. That is a very strong argument against the use of citrated blood. Dr. Faust, I did not have time to go into any detail, but of course when we do direct transfusion we always have a Wassermann done and examination made for malaria. I think that perhaps the danger of malaria in transfusion is greatly exaggerated. We do not give malaria in that way. Perhaps these patients may have had lues or malaria before transfusion.

I wish to say to Dr. Jacobs in regard to the amount of blood it depends strictly on the individual, but that with our lack of knowledge about blood volume we have to be careful about giving large amounts of blood. A small amount, as Blondy says, slowly assimilated, is more likely to do good. The proper dosage of blood is the smaller amount.

I think, Dr. King, that you and I saw one of these anemias of pregnancy about five or six years ago.

One of the things that interested me most is what transfusion will do on the aged. That is an old question. I do not think it will do any harm and it might do good.

In ending, I want to say in old days transfusion of blood was practiced from animal to man, but directly into the vein. They had little or no reaction. I did this work this summer but had to citrate the blood. Animal blood can be given to man. Animals fall into groups just as man does, perhaps more complicated groups.

REPORT OF THE PASTEUR INSTITUTE OF THE CHARITY HOSPITAL FOR THE YEAR 1929.

RIGNEY D'AUNOY, M. D., and
J. W. MILLER, M. D.*

NEW ORLEANS.

During the year 1929 the Pasteur Institute of the Charity Hospital administered anti-rabic prophylactic treatment with material prepared as generally indicated by Semple. We desire to present a tabulation of the treated cases, as well as certain statistical considerations thereon; briefly record methods of vaccine production and make some observations on post vaccinal results.

PRODUCTION OF VIRUS.

All of the material used was produced with a strain of fixed virus secured through the kindness of Parke Davis & Co. Subdural injection of full grown rabbits with emulsions of infected brain stems or cords are accomplished in the usual manner. With the advent of complete paresis, usually on the seventh day after inoculation, the animals are killed by ether narcosis in order to avoid the so common agonal bacterial invasion of the central nervous system so often noted when such infected animals are allowed to die. The dead animals were immersed in 5 per cent lysol solution for 5 minutes, skinned and again dipped in fresh 5 per cent lysol solution. After light external flaming the cord and brain were removed under strict aseptic conditions. Cultures from the internal and external portions of the brain and cord were made in .05 per cent dextrose broth contained in fermentation tubes. An 8 per cent emulsion of brain-cord in normal salt solution was now prepared, filtered through three layers of fine linen and 1 per cent carbolic acid added. The carbolized emulsion was incubated at 37.5° for 24 hours, after which time it was diluted to 4 per cent by the addition of normal salt solution. Of this emulsion, 0.5 mil portions are injected subdurally into each of 2 full grown rabbits and 15 glucose

*From the Department of Pathology of the Charity Hospital, New Orleans.

broth cultures in 5 series of 5, 10 and 20 drops made, with subsequent similar subcultures made from these original cultures after they have been incubated for 5 days at 37.5°. If the test animals were living and well 3 weeks after injection, and if not more than one of each cord-brain culture, and not more than one emulsion culture in any series showed contamination with any type of organisms, the material was considered ready for use and a dating of 3 mos. from date of carbolization allowed.

METHOD OF TREATMENT.

The following plan of treatment was used, all injections consisting of 2 mil portions of virus emulsion, except in children under 3 years of age to whom 1 mil portions of material were injected at a treatment:

Head Injuries:

21 days—injections twice daily for first 7 days, once daily thereafter.

Injuries to trunk or extremities:

- 1—If multiple and severe, same treatment as for head injuries.
- 2—If slight and treatment begun within 6 days after injury—15 days, one injection daily.
- 3—If slight and treatment begun more than 6 days after injury—18 days, one injection daily.

Injuries by unlocated animals:

- 1—With no suspicious circumstances—14 days one injection daily.
- 2—With suspicious circumstances, same treatment as for similar type injury by proven rabid animals.

No actual injury, but handling rabid animal or suspicious animals—18 days one injection daily.

TREATED CASES.

766 patients were treated during 1929. They are classified in the following categories as suggested by the International Rabies Conference of the League of Nations

in order that the statistics of various institutions may be comparable.

A—Animals proven rabid (microscopic or biologic test).

B—Animals diagnosed as clinically rabid.

C—Animals only suspected. (Stray, destroyed, or in such a state when received that the brains were unfit for examination).

D—Animals alive and well after an observation period of three weeks, or with negative brains examined after the observation period.

E—Cases undergoing treatment without actually having been bitten (handling positive or suspected rabid animals).

Table I, tabulates the treated cases in each category together with the type of injuries and deaths. Under the heading "Injuries to multiple sites" in this table, injuries to the head are not included. Table II, tabulates the age of treated cases; table III, their geographical distribution in Louisiana.

In 189 treated cases actually injured, the injury was infected through the clothing, in 374 to the bare skin. 386 treated cases received tetanus antitoxin and nitric acid cauterization of site of injury before administration of anti-rabic treatment; in 43 such cases the injured site was treated with iodine; in the remaining number no local treatment was administered or no history of such treatment was obtainable.

POST VACCINAL RESULTS AND COMPLICATIONS.

One patient, P. L., 7 years old, (C. H. 98, 321) died of rabies 41 days after completion of treatment. He had been severely injured about the face by a proven rabid dog and treatment was begun 14 hours after injury. No post vaccinal paralysis were encountered in this series. Local reactions at the site of inoculation, usually beginning after the sixth or seventh injection and appearing with from 1 to 10 injections thereafter were

noted in 8 per cent of cases. In two cases a persisting for 2 or 3 days and coming on disagreeable generalized urticarial-like rash early during treatment was noted.

Table 1—Classification of Patients with Location of Injuries and Results Obtained.

Category	Injuries to Head		Injuries to Body		Injuries to Superior Extremity		Injuries to Inferior Extremity		Injuries to Multiple Sites		Total	
	Treated	Deaths	Treated	Deaths	Treated	Deaths	Treated	Deaths	Treated	Deaths	Treated	Deaths
A	38	1	23	0	161	0	103	0	11	0	366	1
B	2	0	0	0	9	0	6	0	1	0	18	0
C	25	0	7	0	80	0	54	0	6	0	172	0
D	7	0	1	0	17	0	12	0	0	0	37	0
E	---	---	---	---	---	---	---	---	---	0	203	0

Table II—Age Classification of Patients Treated.

Age-Years	White		Colored		TOTAL
	Male	Female	Male	Female	
Under 1	0	1	0	0	1
1-2	21	17	3	1	42
3-4	54	22	5	4	85
5-9	108	63	15	11	197
10-19	86	45	10	4	145
20-29	42	33	9	12	96
30-39	34	51	1	4	90
40-49	26	22	1	5	54
50-59	16	18	2	1	37
60-69	6	4	1	1	12
70-79	2	3	1	1	7
Over 80	0	0	0	0	0
	395	279	48	44	766

Table III—Geographical Distribution of Patients Treated.

Parishes—	
Allen	2
Ascension	15
Assumption	2
Avoyelles	7
Concordia	1
Evangeline	2
Iberia	1
Iberville	1
Jefferson	45
LaFourche	1
Orleans	598
Plequemines	1
Pointe Coupee	9
St. Bernard	17
St. Charles	16
St. Helena	3
St. James	9
St. John the Baptist	23
St. Tammany	3
Tangipahoa	4
Terrebonne	2
Washington	2
W. Baton Rouge	2

Table IV—Time elapsing between injury or exposure and beginning treatment.

Days	Patients	Days	Patients
1	215	16	2
2	92	18	2
3	79	19	1
4	56	20	1
5	53	21	5
6	58	22	6
7	44	23	4
8	48	24	2
9	23	25	1
10	24	30	3
11	14	31	1
12	7	34	1
13	12	53	1
14	11		

FRACTURES AND FRACTURE DISLOCATIONS OF THE CERVICAL VERTEBRAE*

H. THEODORE SIMON, M. D.

NEW ORLEANS.

The ever increasing use of the automobile with its associated increasing accident toll, together with industrial mishaps and our climatic and aquatic location which makes swimming and driving a favorite pastime has so greatly increased injuries to the cervical vertebrae that they are no longer rarities. In fact it is the comparative frequency of such injuries which has prompted this paper.

Balensweig in writing on this subject rightly says, "the term fatality" and "permanent disability" invariably arise as a word picture in the mind of both the physicians and laymen when thinking of fracture of the spine.

Taylor states that of spine injuries as a whole of 60 per cent are fracture dislocation, 20 per cent fractures alone and 20 per cent are dislocations alone without fracture associated. In my experience and hospital records later stated the percentage of dislocations alone has been zero; in other words, there is a question in the mind whether a dislocation of the vertebrae can take place without some evidence of fracture to the articulations, etc. All texts however recognize dislocation as a definite entity.

The records of Charity Hospital in this instance are very interesting. In the five years from July, 1918, to July, 1923, there were 45 cases of fractures and fracture dislocations of the entire spine. Of this number 14 involved the cervical region and it is amazing to note that only one case recovered, there being a mortality of 92.8 per cent. The five-year period from July, 1923, to July, 1928, sees an admission of 130 cases of this injury to the vertebra, an

increase of nearly 200 per cent. And those involving the cervical region come to 51 (an increase of nearly 270 per cent). Of these 51 cases, 22 died, 19 in which there were no cord involvement improved and were apparently cured, 5 in which cord involvement existed improved and 5 deserted before any definite data was obtained. In other words, there were 27 cases of cervical injury with cord involvement, 22 of these died and 5 recovered, showing a mortality of 81.5 per cent.

In the ten years series which totaled 14 plus 51 or 65 cases there were 54 of fracture alone, 11 cases of fracture dislocation and no case of dislocation alone, further substantiating the improbability of a dislocation occurring without a fracture.

To further demonstrate the increase in these injuries in private practice alone I have seen 7 cases of cervical injury in the past five years, in every case there was cord involvement. Three of these cases were seen in consultation, two died, one recovered. The remaining four were treated by me, two died and two recovered; pressure symptoms in each instance clearing entirely as the results of traction and fixation.

The vertebrae more easily injured are the vertebrae in which there is more motion, namely, the fourth, fifth and sixth cervicals. This injury can be from (a) direct violence whereby the arches are usually fractured; (b) by a fall on either the head or buttocks in which the bodies of the vertebrae are usually crushed; (c) by forced flexion or extension of the spine, this causing a fracture of the bodies and articulations with associated dislocation.

The prognosis is in direct proportion to the amount of injury to the spinal cord together with the nearness to the medulla oblongata and the foramen magnum. Injuries to the first and second cervicals usually cause instant death, the percentage

*Read before the Orleans Parish Medical Society November 28, 1929.

of recovery being less than 2 per cent. Injuries to the third cervical involve the phrenic nerve which leaves the spinal canal between this vertebra and the fourth, resulting in paralysis of the diaphragm and usually death with a few hours. Injuries to the remaining cervical vertebra although grave offer a probability of saving a certain proportion of cases.

Spinal cord injury can be (A) immediate from pressure, of (a) fractured arches or (b) dislocated bodies. (B) Gradual from (a) hemorrhage, (b) edema, (c) inflammation. Occasionally a fracture alone of the body is seen with complete cord severance, in which instance it is thought that there has been a dislocation which has reduced itself spontaneously.

The resulting symptoms of this cord injury can be anything from a slight hyperaesthesia or anesthesia to complete paralysis of the extremities, trunk, diaphragm, bowels and bladder, depending in the amount of cord involvement.

The diagnosis of fracture or fracture dislocation is obviously made by roentgen-ray examination, and here one must remember that a lateral as well as an anteroposterior view is absolutely essential. Of course there is the pain at the sight of injury, muscle spasm here also, sometimes deformity which if present is of the kyphotic type, occasionally crepitation of bone fragments (which should never be intentionally elicited) and the above mentioned pressure symptoms where the cord is involved. It suffices to say that if a person has received an injury and one suspicious spine involvement do not manipulate or put patient in an upright position, better place on a stretcher, immobilize head as best can and get to an institution where roentgenograms may be taken.

The treatment differs with each case, depending on cord involvement. If no cord injury is present, put the patient in bed, sand bags can be placed on either side of

the head, traction may or may not be applied and after several weeks a plaster case (minerva jacket) can be put on allowing the patient to get around very comfortably.

If there is complete cord severance little can be done and nothing can be hoped for. As a matter of routine, however, immobilization by sand bags, traction by some form of head gear, further immobilization on a Bradford frame can be instituted and if there is no improvement with the patient still living, the use of the air or water mattress lessens the bed sore formation and tends to slightly more comfort.

Partial cord injury with a fracture of the vertebral arches should be operated at once. Following this laminectomy traction and fixation are every bit as necessary and should be religiously applied.

Partial cord injury with roentgen-ray evidence of a dislocation of the bodies calls for no operation, but it suggests immediate firm fixation on a Bradford frame, sand bags to the head and immediate heavy and firm pull by weight and pulley traction using the leather jury mask or better the single band webbing strap as shown, thereby reducing the dislocation.

Between these clear cut cases with specific treatment indications come a series where one is dubious as to whether, traction or laminectomy is indicated. My only suggestion is to consult a neurologist and anyone else who has had some experience in this type of work and be guided by his or their opinions.

Following several weeks of traction or laminectomy in the patients who are improving a plaster jacket, including the head, must be applied. After several months of such casts one can change to a leather brace made the same as this cast. This brace should be worn for a long period and by long period is meant until there is roentgen-ray evidence of firm bony union which usually takes from nine to twelve months.

In conclusion:

(1) Fractures and fracture dislocations of the cervical spine are not rarities.

(2) Dislocations alone have not been encountered and it is doubtful if they occur with the frequency reported in texts.

(3) Cases without cord involvement require the same amount of fixation.

(4) All cases with cord involvement do not demand laminectomy, some types being much better treated by traction.

(5) All cases require fixation until there is roentgen-ray evidence of bony union.

DISCUSSION.

Dr. Paul A. McIlhenny (New Orleans): First I wish to compliment Dr. Simon on his excellent paper. I did not know that even Dr. Simon could put so much in such a short paper and when he asked me to discuss this subject I through he would at least leave me something to say.

The majority of fractures, or fracture dislocations, in the cervical region are produced by direct force to the head, and, occasionally by a fall on the buttocks. We then find a second type in which the fracture has been caused by a sudden forward bending, or posterior bending, of the neck, the jack-knife of the cervical region. Fractures and fracture dislocations of the cervical spine, in the majority of cases, are of the lamina or articular process rather than the body of the vertebra; in fact, you might have almost two-thirds of the body destroyed and not a deformity occur, so that we must be very careful, in manipulation, to determine the extent of the injury.

Roentgen-rays of fracture of the spine, A-P and lateral views, especially in the cervical region, should not be taken unless a physician is present. That is a point I would like to stress. And by all means when fractures of the odontoid process of the second cervical are suspected for an unguarded movement when there is a fracture of the odontoid process will possibly result fatally. Cases have been reported where two weeks after injury it was found necessary to change the dressing in order to put on more permanent fixation and a sneeze or cough has so displaced the injured membrane that death has ensued. So I would emphasize the necessity of gentle manipulation—no manipulation if possible—and in all cases of cervical vertebral injury, whether symptoms have developed immediately or not extension. If there are no symptoms immediately following injury—symp-

toms may develop later—I believe extension should be applied, as shown by Dr. Simon, applied very gently without manipulating the cervical region at all, or by a Barton bandage applied to the head, which supports it under the chin and under the occiput.

Dr. Simon has stressed immobilization. That cannot be stressed too greatly. Fixation in a plaster cast supported by the pelvic girdle rather than one supported by the shoulder, because the patient moves his shoulder and sooner or later the bandage gets loose; frequently he is uncomfortable and we may find it necessary to change it. Incorporation of the chest with a Minerva jacket, supporting the chin, and the occiput made comfortable by adequate padding will insure a favorable result in the majority of cases where there is no injury to the cord.

I have been fortunate in having been called in consultation in a number of such cases and had the opportunity of seeing many of them treated. One case I recall very intimately, I saw within a half hour after he was hurt; he then had symptoms in both arms. We applied immediate extension and within an hour there was return of sensation and subsidence of pain. That case was kept in extension for a week with sand bags supporting his head laterally; then a Minerva jacket was applied. He is now back at work. On the other hand, a very simple injury may result fatally. About ten years ago a case came into Dr. Parham's service with a fracture of the transverse process on the left of the third cervical vertebra; he had a numbness of the right arm—extension relieved this numbness. Unfortunately, three weeks later he died of meningitis. So a simple injury may end disastrously.

Gentle manipulation and not more than is absolutely necessary, traction and prolonged fixation will, in the majority of these cases, relieve symptoms and, in a very fortunate number, result favorably.

Dr. G. C. Anderson (New Orleans): The first thing I want to do is to subscribe to what Dr. McIlhenny has said, particularly with reference to the excellence of the presentation by Dr. Simon. He has covered his subject thoroughly and left little to discuss.

One point to be emphasized in connection with what Dr. McIlhenny says, is in severe cases to include the chest in the plaster cast; in other words, it should be brought down sufficiently low so that the principal weight bearing is carried by the pelvic girdle; if the weight is carried by the shoulder girdle you are still pulling the head because the shoulder is supported from the base

of the skull and the skull, of course, is supported by the vertebral column, so it is a very excellent idea not to rest too much weight on your shoulder girdle, for if you are going to put your weight on the shoulder girdle you press the scalenus muscles and they will pull right down on the cervical spine.

The question of operation in many cases depends to a large extent on the results of the spinal puncture with the Quackenstedt test. If you have a roentgenogram which shows a tremendous amount of displacement, immediate paralysis coming on at the time of the accident, with no signs of improvement, we may feel safe in saying that the cord was severed and that the operation was not indicated, especially if that displacement remains. But in many cases we will find a roentgenogram that shows only a small degree of malalignment and at the same time the man has evidence of spinal paralysis at that region; that may be due to hemorrhage or edema, more particularly if the paralysis did not come on immediately at the time of injury; supposing he was injured and he had very little paralysis and it developed gradually. In that case if we did a spinal puncture and applied pressure to the jugular vein and did not get response we would feel that there was a block there that might be removed by laminectomy. As he has shown by statistics, a tremendous number of these cases are inoperable, but in the case of subarachnoid block without a great deal of displacement I believe that the patients are entitled to the chance of laminectomy and decompression.

I have one little practical point to bring out in connection with the Quackenstedt test. It should never be done in the upright position; many people have done spinal puncture that way. The patient should be in the horizontal position and a small pillow placed under his head so that the spine is as straight as possible. Now how are we going to measure the pressure if we have no manometer? Take your ordinary blood pressure machine, get a little length of rubber tubing, then take a metal adapter and stick one end into the spinal needle and the other in the cuff attachment of your blood pressure apparatus and you can get your reading and get your response to jugular pressure just as well as with the spinal

manometer. And that little piece of apparatus is within the reach of everyone.

Dr. E. S. Hatch (New Orleans): I quite agree with the other men who have discussed Dr. Simon's paper, that he has covered the situation beautifully.

In regard to the cases of subarachnoid block of which Dr. Anderson spoke, I think laminectomy should be done in all cases where there is the least possibility of this procedure doing good. Of course, when complete paralysis immediately follows injury, it is not indicated.

In taking roentgenograms, always be sure to get a lateral skiagraph. I cannot conceive of anything more desirable than two views, the antero-posterior and the lateral; often nothing is revealed in the antero-posterior view, while the lateral view will show something you do not suspect at all. That is quite frequently borne out, more especially in the fracture cases.

I believe it is possible to get dislocation without fracture; in fact I have succeeded in reducing two; one case I remember distinctly, a case I saw last year, in which the roentgenograms pictures showed nothing.

Dr. C. S. Holbrook (New Orleans): The point I wish to bring out Dr. Hatch has covered, and that is the necessity of the lateral roentgenogram of the spine. I have seen several cases where fracture has been ruled out because the skiagraph had only been taken in the anterior posterior view. It is a little difficult to get the patient in the lateral position and a little hazardous, but it is something necessary, a good picture to aid in diagnosis being often the main thing.

Recently I saw a most interesting case, a man with fracture of three cervical vertebra with no neurological findings except a very mild tingling in the middle finger of right hand; he had three distinct fractures, three vertebra involved, the fourth, the fifth and the seventh cervical vertebra. This individual in an attempt at suicide dived straight into a brick wall and broke his spine in three places. A cast was applied and he made a complete recovery. He had a little blood in his spinal fluid but no black.

Another thing I wished to mention is the use of the air mattress, and to get this early before

bed sores begin. The instrument houses are now keeping air mattresses but formerly we used to have to telegraph for them and bed sores would develop four or five days before we received them.

In regards to the management of the bladder. I believe that the best way to treat the bladder is not to catheterize it, but to let it overflow; there is no danger of rupture and the patient does not develop sepsis nearly so rapidly.

Dr. E. Denegre Martin (New Orleans): In handling fractures of the cervical vertebra we must combine comfort with efficiency. I have found that the head balanced in a sling while traction is being made, is far more comfortable than resting on the mattress or a pillow and requires much less pull to effect the same results.

Dr. J. T. O'Ferrall (New Orleans): It seems to that the essayist and the discussers have laid stress on severe cases of fractures of the cervical vertebrae, but have said nothing about the symptoms. In my experience, the greater number of cases occur from slight injuries such as a rotary dislocation. It is astonishing how many of these cases are produced by simple injuries, such as children playing in bed and butting their heads together. A very interesting case of this type has been recently reported, namely a man was told by his wife to go to bed; he playfully dived into bed and the slight twisting of his head in doing so produced a rotary dislocation. These dislocations and fractures are distinctly of two types, the typical rotary dislocation usually with slight fracture or chipped fracture, and the compression fracture. The cervical vertebrae are more subject to the rotary dislocation. I am particularly interested in hearing no one mention the importance of taking a roentgenogram of the upper cervical spine with the patient's mouth wide open. It is the only satisfactory work to get a view of the axis and atlas, including the odontoid process. This latter process can be brought out beautifully if the proper tilt of the head is maintained while the picture is being made, being sure to remove plates with false teeth. Very little has been said about differential diagnosis in these cases. If a man falls from an airplane, or in the instance cited of the man who ran 30 yards butting his head into a wall, we can be sure of fracture of the vertebra or skull. Certainly, con-

cussion and most probably fracture or dislocation of the vertebra, but in the simpler cases how are we to differentiate between an injury to the vertebra or an ordinary torticollis? In the case of children who are put to bed well and awaken with a wry neck, can we be sure that they have not been playing and a slight accident has produced a rotary dislocation? Is it a dislocation or is it a torticollis? These cases also must be differentiated from tuberculosis of the spine. It would seem that tuberculosis would be slow in onset, associated with some rise of temperature, but it is an astonishing fact that some of these cases of tuberculosis are not recognized until the patient suddenly develops a wry neck. Typical symptoms of rotary dislocation are, spasm of the latereal cervical muscles at the site where the rotary dislocation or fracture has taken place; the occiput is pulled to the affected side and the chin to the opposite side. Certainly this picture very greatly simulates an ordinary torticollis and it is necessary to differentiate between them. Nothing has been said about digital examination of the posterior pharyngeal wall, which is exceedingly important. If there is a rotary dislocation and one side of the vertebral body has projected forward, digital examination of the posterior pharyngeal wall will reveal a ridge. There are cases where reduction has been made by pressure upon this ridge in the posterior pharyngeal wall. Times does not permit a great deal which has been left unsaid in regard to these cases. Certainly diagnosis should not be made upon the roentgenogram alone, as has been suggested. The five chief points of diagnosis are:

1. The position of the head:
2. Position of the transverse processes as they are palpated in the neck.
3. The presence or absence of a ridge in the posterior pharyngeal wall.
4. The information derived from an anterior posterior X-ray through the mouth.
5. A careful lateral roentgen-ray examination of the cervical spine.

Dr. Simon (closing): I desire to thank the members who have so kindly discussed this paper and the amount of discussion is a source of gratification for having selected this subject. In closing let us again stress the necessity of fixation until roentgen-ray evidence shows that it is no longer needed.

CASE REPORTS AND CLINICAL SUGGESTIONS

ACUTE LYMPHATIC LEUKEMIA: REPORT OF CASE IN ELEVENTH MONTH MONGOLIAN IDIOT.

HYDER F. BREWSTER, M. D.,

AND

HERBERT E. CANNON, M. D.,

NEW ORLEANS

In 1857, von Friedrich first described a case of acute leukemia. In 1895, A. Fraenkel described the pathological changes of the blood in such cases and stated that acute leukemias were all lymphemias in which the increase in the white cells was almost, if not entirely, in the lymphocytes. Following this lead, many contributions to the literature on acute leukemia appeared. As late as 1904 nearly all cases were classed as acute lymphatic leukemia and, in fact, nearly all writers denied the existence of acute myelogenous leukemia. However, more recently, careful studies without, but especially with, special differential staining methods, have shown that not only is acute myelogenous leukemia far more frequent than was formerly thought, but that actually acute lymphatic leukemia is the rarer disease.

Several factors have entered into the gradual elucidation of the problem of acute leukemias and their proper differentiation. Perhaps the greatest single factor has been the application of the oxydase staining method.

REPORT OF CASE

Our search of the literature failed to reveal the report of any other case of acute lymphatic leukemia in a Mongolian idiot. This patient, a predominantly white colored male, eleven months of age, was admitted to Charity Hospital, New Orleans, December 3, 1928, with the complaint of fever, weakness, and restlessness. The baby was the sixth full term child and appeared normal to the parents until about the sixth or eighth month when inability to support its head or to sit alone aroused suspicions of undue weakness. The entire life history was uneventful except for a few mild colds, weakness, and the terminal illness. The child rarely cried, unless from hunger or real pain. The state of weakness persisted; sitting

alone or crawling were never observed. Teeth failed to appear at the proper time. Five or six days previous to admission, restlessness and fever developed; these symptoms increased as greater weakness, anorexia, and air hunger made their appearance and progressed steadily.

The five older children in the family were all well, intelligent, and making normal progress. The parents were well and rather surprisingly intelligent; the father was forty-six and the mother thirty-seven years of age.

Physically, the patient was well nourished, weighing twenty-five pounds, and the body proportions were all practically normal. Restlessness was apparent, the head being thrown back at times and attempts made at deep breathing. The Mongolian facies were, however, readily apparent. The eyes were far apart, separated by a broad, flat nose, and the typical downward and inward slant of the relatively narrow palpebral fissures obtained. The mouth was open most of the time, and a thick heavy tongue was in evidence. The antero-posterior diameter of the head was decreased. The limbs were of normal length and proportions, but the muscles and ligaments about the joints were extremely lax and flabby; great over-play and contortions could be easily produced about any of the joints. The fingers were of normal length but rather thick at the bases; the distal phalanges of the little fingers presented slight inward deflections.

More minute examination revealed a normal scalp with straight, black hair, coming rather far down on the forehead. The anterior fontanel was $2\frac{1}{2}$ by 3 cms. The conjunctivae were extremely anemic. There were no teeth, but the mucosa of the gums, as well as that of the rest of the oral cavity, presented small, shallow, irregular ulcers. The skin was almost as white as that of a white child and presented anemic and a few widely scattered purpuric spots. Small glands were palpated in the neck, as well as in the axillae. The area of cardiac dullness was increased. Systolic murmurs of blowing quality were heard at all valvular areas; heart sounds were muffled. Scattered moist rales were heard throughout most of both lungs, but no dullness could be detected. A small umbilical hernia was present. The spleen was readily palpated as a moderately firm, smooth mass 5 by 8 inches, rather freely movable and almost entirely below the costal border; it extended medially to the umbilicus and downward half the distance to the symphysis pubis. The liver was smooth, firm, and extended to the umbilicus.

The blood Wassermann was negative. Urinalysis revealed a trace of albumin and a mod-

erate number of hyaline and fine granular casts. A complete blood picture presented 1,500,000 red blood cells, 108,000 white blood cells, 30 per cent hemoglobin by the Talquist scale. The red blood cells presented anisocytosis, poikilocytosis, and polychromatophilia. Two nucleated red blood cells of normoblast type were encountered in making a differential leukocyte count; the latter revealed nine small mononuclear lymphocytes, five normal polymorphonuclear leukocytes, and eighty-six large mononuclear lymphocytic cells, averaging 14 in diameter, which presented no oxydase granules by the oxydase stain method applied to numerous smears.

PROGRESS OF CASE.

The patient lived twenty-eight hours after admission. The initial temperature of 100 2-3°F. rose to 102°F. Purpuric spots increased in number. The rather moderate air hunger increased to extreme restlessness and gasping for more air. A yellowish-grey color was noted in the skin during impending death. Medical science offers nothing for these patients.

NECROPSY

No serious cavity or its lining presented any inflammatory condition; only the pericardial cavity contained fluid, 110 c. c. and of light straw color.

The mesenteric lymph nodes, as well as mediastinal and perihilar nodes were slightly enlarged without any attempt at matting together. They were firm and on section presented a greyish-yellow color. The heart was somewhat enlarged and of pale red color and firm consistency. The kidneys were enlarged, flabby, and pale. Microscopy revealed albuminous or granular degeneration of the tubular epithelium and congestion of the intraglomerular and interstitial capillaries, many of which presented massive accumulations of large lymphocytes. The lungs were voluminous and crepitant throughout. Here, too, the rich vascular plexuses presented marked accumulations of large lymphocytes. The liver was considerably enlarged, congested, and presented yellowish-grey foci in its deeper portions. Microscopic examination showed granular and fatty degeneration of the liver cells, foci of lymphocytic infiltration and large intravascular accumulations of large lymphocytes. The spleen was rather flabby, 5 by 8 inches, and presented microscopically distinct Malpighian bodies, whose cells contrasted markedly with the large lymphocytes filling the splenic pulp and vascular spaces. (All parenchymatous organs were markedly pale.) Organs not mentioned presented nothing of importance.

ARACHNIDISM—SPIDER POISONING.

W. H. BROWNING, M. D.,

SHREVEPORT, LA.

Arachnidism, or spider bite poisoning, has become recognized as a distinct clinical entity by the medical profession; however, somewhat in opposition to the teachings of entomologists and arachnologists. Lay people in all parts of the world have, apparently with good reason, for years considered the spider as poisonous. To them all spiders are considered poisonous and many of the cases so considered by them, for instance those resulting in sloughing, may be the result of secondary infection. Other cases may be a form of sensitization as a case reported by Schmaus⁽³⁾ in 1929. Toxicity for the much dreaded tarantula has not been definitely proved. The *Lactrodectus mactans*, or "black widow spider," is the only spider in the United States, so far as is known, that produces a definite train of symptoms.

The clinical entity produced by the black widow spider is apparently quite common in this section of the country. Without making a special survey, the writer has heard of eleven cases in addition to the one that he is reporting that occurred in the vicinity of Shreveport during the last four years. All of these reports came from reliable physicians.

Bogen^{(1) (2)}, in 1926, reviewed 150 cases that had been reported in the literature and presented 15 new cases that had been treated in Los Angeles General Hospital. He states that the condition is more prevalent in the Southern half of the United States, and most of the cases reported have been from California. None have been reported from Louisiana.

LACTRODECTUS MACTANS.

The *Lactrodectus mactans*, or "black widow spider," so-called from its custom of eating its mate, is a large black spider, brilliantly marked with red or yellow, or both. The female is much larger than the male and, characteristic of all species, is the one that is poisonous. Its web is coarse and is located in a dimly lighted place such as the attic, basement, under the house, outdoor privy, dark corners of barns and other outdoor buildings, in brush and stump holes.

SYMPTOMATOLOGY.

Bogen^{(1) (2)} has described the symptoms in detail in order of frequency and has produced most of the symptoms experimentally in the white rat.

The condition is usually seen in summer or autumn. It is much more frequent in males than females. Most of the victims are bitten on the penis or adjacent parts while sitting in an outdoor privy. At first there is only a stinging sensation, which may or may not be accompanied by a tiny red spot at the point of injury. In from fifteen minutes to two hours the patient begins to experience excruciating pain, which continues from two to six hours. The pain spreads by continuity. For instance, a patient that is bitten on the penis will first experience pain in the groins and then it will rapidly spread to other parts, but as a rule it will localize in the abdomen or chest, or, if a patient is bitten on the arm, he will first experience pain in the chest. The pain is intense and is described in various ways by patients. It is usually accompanied by muscle spasms, writhing, rolling, doubling up, or tossing about. If pain localizes in the abdomen, as it usually does, the abdomen presents a board-like rigidity which is not accompanied by local-

ized tenderness. Other symptoms according to Bogen, in the order of frequency, are "profuse cold perspiration, restlessness and anxiety, difficult breathing, nausea and anorexia, vomiting, constipation, cyanosis, delirium, prostration or shock, insomnia, disturbances of speech, acute urinary retention, paralyses, convulsions, localized swelling of the bitten part or other parts of the body, a macular skin eruption, chills, vertigo and jaundice." Tremors, muscle twitching and paraesthesias are present in some cases. Slow pulse and rapid pulse occur with about the same frequency. Weakness, tingling of the extremities and general body aches are frequently present in a prolonged convalescence. Temperature and respirations are usually elevated. Practically all cases show a leukocytosis with an increase in the polymorphonuclear leukocytes. The total count usually varies from 10,000 to 14,000. Some deaths have been reported.

TREATMENT.

According to Bogen, more than seventy-five remedies have been administered for this condition. Morphine, whiskey, ammonia water, atropine, magnesium sulphate, hot baths and fomentations, bleeding, opium, strychnine, camphor and potassium permanganate have been the principal therapeutic agents. To the list that Bogen mentions hemostatic serum might be added as it was used on one of the cases occurring near Shreveport.

CASE REPORT.

F. E., white male, aged 39 years, locksmith by profession. About 7 o'clock P. M. on August 18, 199, while at stool in an outdoor privy, was bitten on the glans penis by a large black spider. For about 15 minutes he experienced no ill effects other than a slight stinging sensation. Then he was seized with a severe pain in each groin. The writer was called, but before he arrived at the

home the patient's condition had become so serious that members of the family decided to move him to the Sanitarium. About forty-five minutes after being bitten, patient was admitted to the Highland Sanitarium. The patient was cyanotic, writhing with pain and bathed in a profuse, cold perspiration. The pain was localized over the precordium and radiated to the left shoulder and arm. The pulse had a good volume, was regular, and had a rate of sixty per minute. Respirations twenty-eight per minute. Blood pressure 170-190. Morphine, grains $\frac{3}{4}$, was administered by hypodermic, but before this had had time to have any appreciable effect, nitroglycerin, grains $\frac{1}{100}$, was administered under the tongue. This gave considerable relief immediately. The nitroglycerin was repeated in fifteen minutes. About two hours after admission to the Sanitarium he had a temperature of 99.4° F. About four hours after admission he had a temperature of 101° F., and complained of weakness and general body aches. He was given morphine, grains $\frac{1}{4}$, by hypodermic and rested fairly comfortable the remainder of the night. The following morning at 8 o'clock his temperature was 99.2° F. Red

cell count 4,900,000, hemoglobin 80%, white cell count 13,750 polymorphonuclear leukocytes 80%; small lymphocytes 20%. Urine negative. Blood pressure 130/70. Pulse rate seventy-six. At four o'clock p. m. the temperature was normal and patient was comfortable except for generalized body weakness. He was discharged from the Sanitarium. At no time after his admission was there any local evidence of the spider bite.

SUMMARY.

1. Attention is called to the more important symptoms of a condition described accurately by Bogen in 1926.
2. This condition is apparently not uncommon in North Louisiana.
3. A case is reported presenting most of the typical symptoms.

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STUDY OF THE TREND OF NEGRO INFANT MORTALITY.—A report has recently been issued by the U. S. Public Health Service on a study based on negro and white infant mortality rates in the urban and rural areas of a group of Northern and Southern States, in urban and rural Maryland, and in four cities, viz., Richmond, Va., Baltimore, Md., Charleston, S. C., and New Orleans, La.

In every area studied, negro infant mortality rates were higher than the corresponding rates for white infants. This difference was not marked in the urban areas of the South. Negro infant mortality rates in the rural South, however, were nearer to those of the corresponding white mortality rates than in any other area. The lowest negro rates were found in the rural South and the highest in the Southern cities. On the whole, infant mortality among the negroes shows trends similar to those shown by infant death rates among the white populations of the same communities. In two cities, Baltimore and Richmond, negro infant mortality has declined more rapidly than that of the white population.

The study also discusses negro and white infant mortality from various causes in several of the Southern States of the birth-registration area.

Negro infant death rates are higher than the rate for white infants for every cause except four contagious diseases. The greatest excess of negro over white infant deaths was due to unknown and ill-defined diseases. Deaths from respiratory diseases, all forms of tuberculosis, and gastro-intestinal diseases were considerably more frequent among negro than among white infants. Mortality among infants of both races is extremely high during the first month of life; white rates fall rapidly during successive months; negro rates also decrease, but the decline is not so sharp. The ratio of negro to white infant deaths is highest between the fifth and the tenth month. The excessively high rates which occur in both races during the first month are due for the most part to premature birth and congenital debility. Negro and white infant mortality from these causes are very much alike. The principal cause of the excess of negro over white infant deaths from the second to the tenth month is pneumonia. Deaths from diarrhea and enteritis are considerably more numerous among the negroes than among the whites.—United States Public Health Service, Health Bulletin, May 14, 1930.

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BLOOD REGENERATION IN SEVERE ANEMIA.

The enthusiastic reception of liver extract in the treatment of anemia has been followed by a natural reaction, namely, to expect liver extract, as prepared for patients with pernicious anemia, to give satisfactory results in the treatment of all types of anemia. This has not been the case, needless to state, because the maturation factor which is present in pernicious anemia liver fraction is applicable to a specific disease of entirely different pathogenesis than the average type of anemia.

Whipple and his co-workers,* to whom is indebted the primary studies on the influence of liver in anemia, have not been satisfied that liver is incapable of bringing about a prompt regeneration of the blood in other types of anemia. They have extended their investigations in experimental anemia and the treatment of these hemoglobin anemias with liver, and now report upon a liver fraction which contains 65 to 75 per cent the potency of whole liver for hemoglobin production, a fraction which represents 3 per cent of the weight of the whole liver. In this substance there are probably a number of active principles, many of which are inorganic in character and are of importance. Adding iron to this fraction of liver will increase total output of hemoglobin, and the same statement holds true through the addition of the whole liver to the material. The authors state that the fraction is palpable and may be taken without gastric disturbances. They believe that liver and kidney are of importance in supplying in the most available form certain factors necessary for the reconstruction of new hemoglobin and red cells in anemia.

THE PRESIDENT OF THE LOUISIANA STATE MEDICAL SOCIETY.

Dr. Herman Bertrand Gessner was elected head of the Louisiana State Medical Society at its recent meeting in Shreveport. The election of Dr. Gessner is a tribute not only to him as a physician but is also a recognition and appreciation of his splendid qualities as a man, a friend of the medical profession and a beloved doctor.

*Blood regeneration in severe anemia, XXI. A liver fraction potent in anemia due to hemorrhage, G. H. Whipple, F. S. Robscheit-Robbins, and G. B. Walden. *Am. J. Med. Sci.*, 179, 628. 1930.

Dr. Gessner was born in New Orleans in 1872, and received there his complete education. He secured an A. M. from Tulane University in 1891 and his degree of doctor of medicine four years later from the same university. One year after graduation he was elected recording secretary of the Orleans Parish Medical Society, and since then has held numerous offices in the organization. His ability and his interest in the activities of organized medicine culminated when as a young man only 32 years old he was elected president of the Orleans Parish Medical Society. Dr. Gessner's interests in the Louisiana State Medical Society have been many and varied. He has appeared frequently on the program of the scientific sessions; he has acted as Councillor from his home district, and he has been a member of numerous committees

The new president of the Society has been active as a teacher of surgery in Tulane University since the time of his connection in 1904. At the present time he has advanced by successive grades to the present position of Professor of Clinical Surgery in Tulane Medical School. He is a Fellow of the American College of Surgeons, the American Medical Association and numerous other smaller medical and surgical organizations.

The State Medical Society and Dr. Gessner are both to be congratulated upon the selection of the new president of the organization. Dr. Gessner is to be congratulated because the honor of leading his State Society has been conferred upon him; the State Society because in their new leader they have a man who has been active always in the advancement of medicine from the scientific, economic, pedagogic, or

ethical point of view, and who always has been eager to help and to aid organized medicine in every way within his ability and power.

THE NEW PRESIDENTS OF THE MISSISSIPPI STATE MEDICAL SOCIETY.

The constitution of the Mississippi State Medical Association, at the recent meeting in Vicksburg, was so changed that the officers of the Association include a president and a president-elect. It is for this reason that the Journal announces the election as President of Dr. E. F. Howard, and the selection as President-Elect of Dr. J. C. Culley. Thus at the recent meeting of the House of Delegates the presiding officer for next year and the following year were chosen, incidentally by the unanimous vote of the assembly.

The President of the Mississippi State Medical Association, Dr. Ewing Fox Howard, is one of the best known physicians in the State of Mississippi. Dr. Howard was born in 1874 and graduated from Tulane Medical School twenty-three years later. For the last few years he had devoted himself to the specialty of otology and laryngology, in which he has achieved high reputation throughout the South. Much of the success of the last meeting of the Mississippi State Medical Association is attributed to the efforts of the new president.

Dr. John Clifton Culley, the President-Elect who will succeed Dr. Howard in the presidential chair, was born in 1886, and will be one of the youngest men to hold the presidential chair in the history of the Mississippi State Medical Association. Dr. Culley graduated from Vanderbilt Univer-

sity Medical School in 1909, and has devoted the greater part of his medical life to the practice of surgery. The State Association should receive felicitations upon their happy selection of the two new presidential officers.

NEW OFFICERS OF THE LOUISIANA STATE MEDICAL SOCIETY.

At the 1930 meeting of the House of Delegates of the Louisiana State Medical Society, Dr. S. C. Barrow of Shreveport was unanimously elected to the position of President-Elect of the organization. Dr. Barrow well deserves the honor. For many years he has given to the best of his ability, his time and his interests in furthering the purposes of the organization. He has done this largely through the position as Councilor of the Fourth Congressional District, a position that he has held for a number of years. In addition to his interests in the State Society the President-Elect is recognized as one of the outstanding roentgenologists in the State of Louisiana.

The First Vice-President is Dr. S. J. Couvillon of Moreauville. Dr. Couvillon is well known throughout the State. He has been a Councilor of the Eighth Congressional District for a number of years and has served as Chairman of the Council. He is now Secretary of the Avoyelles Parish Medical Society and has served as an officer of that Society on several occasions.

The Second Vice-President elected at the Shreveport Meeting was Dr. C. A. Weiss of Baton Rouge, who has been Councilor of the Sixth Congressional District for a number of years. Dr. Wiess has previously been one of the Vice-Presidents.

Dr. A. G. McHenry of Monroe was elected Third Vice-President. He has been for a

number of years a member of the House of Delegates.

Dr. J. J. Ayo of Raceland has proved such an extremely efficient and able Chairman of the House of Delegates that his election was a foregone conclusion. A man of forcible personality and an excellent parliamentarian, it would be very hard indeed to find a man able so successfully to carry on the business of the House as has Dr. Ayo during the several years that he has held the position.

The genial and able Dr. P. T. Talbot, we are happy to announce, was re-elected as Secretary-Treasurer.

The Councilors that were elected include Dr. H. E. Bernadas, re-elected from the First District; Dr. D. N. Silverman, Councilor from the Second District; Dr. J. B. Benton of Monroe, Councilor from the Fourth District; Dr. C. P. Gray of Monroe Councilor from the Fifth District. All of these men have been active and most valuable workers in organized medicine.

The members of the following committees were renominated and elected: Committee on Public Policy and Legislation, Committee on Publication, Committee on Medical Defense, Committee on Hospitals, Committee on Health and Public Instruction and Committee on Budget and Finance.

Dr. John A. Lanford was elected on the Journal Committee.

Dr. W. H. Seeman was nominated as Delegate to the American Medical Association with Dr. Arthur A. Herold as Alternate.

The next place of meeting will be in New Orleans.

HOSPITAL STAFF TRANSACTIONS

CHARITY HOSPITAL SURGICAL STAFF.

The regular monthly meeting of the staff was held on Wednesday night, April 16, 1930, with Dr. A. C. King presiding as chairman.

The meeting was opened by Dr. Alton Ochsner, who presented an interesting paper on when to drain and when not to drain the abdomen. Dr. Ochsner reviewed the literature and gave the present day thoughts on this very important subject. At the conclusion of his talk he stated that the dictum of the past, which was "Drain when in doubt," is now changed to "Do not drain when in doubt." Those who followed Dr. Ochsner in the discussion of his paper, more or less concurred in this last opinion. The paper brought out an interesting discussion, in which Drs. Urban Maes, Joseph Danna, C. J. Miller and Denegre Martin took part.

The next presentation was a brief talk on mastoiditis in individuals under three years of age, by Dr. Amedee Granger. Dr. Granger, who has been a pioneer in this particular field, showed a number of interesting slides, included among which were normal cases showing the transformation of the simple antrum cavity into a more complicated mastoid containing numerous cells. This went on, he explained, until the full development was reached, around the third year. In mastoid infections of these cases bone destruction takes place, and a number of such cases have had to have radical mastoid operations in this early period of life. What the results have been, so far as the radical operation of these infants is concerned, has not been tabulated. However, it is felt at this time that this is the procedure of choice. Several in attendance, including Drs. Cassegrain and Monte Meyer, praised Dr. Granger's excellent work.

The next order of business was the presentation of two interesting deaths. The first case was that of an individual fifteen months of age, who had been admitted to the hospital with laryngeal diphtheria, and on whom it became necessary to perform a tracheotomy. This child developed measles followed by otitis media, necessitating several punctures and drainage, and later developed bilateral mastoiditis. Under local anesthesia both mastoids were opened and curetted as is usually done in operations of this type. The

child died five days later. Autopsy also showed that the child had broncho-pneumonia. The discussion which followed was lengthy and interesting.

The next case was that of a male adult, on whom a clinical and radiological diagnosis of stomach ulcer was made. Exploration resulted in overlooking of ulcer which was found on the posterior surface of the stomach at autopsy. The patient died seven days after being operated on.

FRANK L. LORIA, M. D.

FRENCH HOSPITAL.

The regular meeting of the French Hospital Staff was held on Friday, March 28, 1930, Dr. M. J. Lyons presiding. The minutes of the last meeting were read and approved. The report representing the patients discharged during the month of February was given by Dr. E. L. Zander. Those present at the meeting were: Drs. R. L. Gordon, M. J. Lyons, E. L. Zander, H. B. Alsobrook, L. L. Cazenavette, R. F. Sharp, L. F. Rolling, J. F. Sicomo, Chas. Cox, E. M. Warner, D. N. Silvermann, P. Graffagnino, H. W. Harris, H. F. Ader, C. J. Brown, D. V. Longo, J. P. Palermo, S. C. Lyons, W. R. Strange, F. H. Hardenstein.

Dr. W. H. Harris moved that the regular business be dispensed with so as to allow Dr. D. N. Silvermann to present a case of Glandular Disturbance. The motion was seconded and passed. After Dr. D. N. Silvermann had briefly presented this case he was thanked by Dr. M. J. Lyons in behalf of the Staff for the interesting talk.

The deaths occurring during the preceding month were brought up for general discussion and were as follows: Lobar pneumonia, multiple burns, luetic meningitis, incomplete abortion. These cases were discussed by Drs. H. B. Alsbrook, M. J. Lyons, P. Graffagnino.

The scientific program for the month was Vaccine Treatment of Carbuncles, which was presented by Dr. S. C. Lyons. Dr. Lyons brought out remarkable results that he obtained from the use of vaccine in the treatment of carbuncles; the effectiveness and simplicity of the treatment.

The discussion was opened by Dr. W. H. Harris, who spoke on the essential logic of vaccine therapy. Dr. P. Graffagnino said that with such startling results as had been revealed by Dr. S. C. Lyons

the treatment of carbuncles would be revolutionized. Others taking part in the general discussion that followed were: Drs. H. B. Alsobrook and L. J. Menville.

Dr. P. Graffagnino asked the Staff for their support in raising money in behalf of the Hospital. He outlined briefly the need of a moderately priced hospital and especially the need of a moderately priced maternity service in the downtown section of New Orleans. At the close of this appeal Dr. P. Graffagnino asked for suggestions from the Staff as to how this money could be raised.

Dr. L. J. Menville moved that the Civic Organizations of New Orleans be invited to send representatives to a luncheon where their aid would be enlisted in putting over a drive for the benefit of the French Hospital. This motion was seconded and passed.

There being no further business the meeting adjourned.

EDW. L. ZANDER, M. D.

VICKSBURG SANITARIUM AND CRAWFORD
STREET HOSPITAL STAFF MEETING.

May 10, 1930.

Abstract: Acute traumatic osteomyelitis of the cranium with extradural abscess. Dr. J. A. K. Birchett, Jr.

Patient: Colored male, aged 17 years; school boy; admitted to hospital April 24, 1930.

Present Complaint: Has lump on head (front) with severe frontal headache and slight dizziness.

History of Present Complaint: Two weeks ago was in an automobile wreck; car turned over but does not remember any special hurt except bumping head against the front seat of the car; no great amount of soreness. In three or four days swelling began to get larger and more painful. Consulted family physician who advised cold packs. Mass has grown to the size of a small walnut and headache is severe, with fever and general aching.

Past History: In April, 1928, began having cough and fever which lasted for five weeks. Physician diagnosed the condition as whooping cough. Had recurrence of cough in April, 1929, with loss of weight, fever, and swelling of abdomen which proved to be tuberculous peritonitis. Treated with pneumo-peritoneum with recovery. In

September, 1929, began to complain of cough, malaise, and pain in the left chest, which proved to be pleurisy with effusion. Paracentesis was performed and the lung condition controlled by artificial pneumothorax. Lung lesion apparently entirely cleared and patient gained weight and strength.

Patient has abdominal scar at the site of pneumo-peritoneum and explanatory incision which occasionally breaks down and discharges purulent exudate. Tissue from this sinus has proved tuberculous and has nearly healed under roentgen-ray therapy. Patient was about to be discharged as cured of tuberculous infection of peritoneum, pleura and abdominal wall when present complaint brought him back to the clinic.

Physical Examination: Well developed and nourished; small tumor on the left perietal region, hard and tender to touch; some swelling in the left intra-orbital region, partially closing left eye. Temperature 98° F. Tonsils present and negative; teeth good; heart negative; lungs negative. Abdomen shows right rectus scar with evidence of recently healed sinus; otherwise negative. Genito-urinary system negative.

Roentgen-ray examination of the skull shows a small rarefied area in the left parietal region, corresponding to the site of the tumor. Wassermann and Kahn tests negative.

Course: The diagnosis of acute traumatic osteomyelitis of the cranium was made. The mass was incised; the skin of the scalp and the fascia and the frontal muscles were carefully separated until a sub-periosteal fluctuating mass was palpated. This was incised with escape of thick purulent material. The bone was then exposed through an opening large enough to admit the end of a large hemostat. The aperture was further enlarged with the curet to the size of a nickel. Possibly two ounces of creamy pus escaped, exposing the pulsating dura which with relief of pressure was seen pushed up against the opening in the cranium. All dead bone was ronguered from the edge of the opening and the wound packed with iodoform gauze. The scrapings from the bone were examined microscopically for evidence of tuberculosis but it was not found.

The patient has made an uneventful recovery, headache being instantly relieved, the dizziness dis-

appearing in twenty-four hours, and the edema about the face subsiding in forty-eight hours. Packing was removed in seventy-two hours and healthy granulations were found. Patient was sent home and has returned for dressings. When last seen on May 5 the wound had nearly healed and patient was feeling well.

Abstract: Ruptured tubal pregnancy with complicating Meckel's diverticulitis. Dr. G. M. Street.

Patient: White, female, aged 36 years; admitted to hospital April 15, 1930.

Present Illness: Began about ten or twelve days ago with pain in the right hip. Patient took purgative and the next day after taking some more purgative pills, began having severe pain in the lower abdomen, associated with extreme weakness and pallor. States she was so pale and sick that her relatives thought she was dying. Relieved by hypodermic of morphine. The next morning was very sore and weak and had nausea and vomiting; still suffering with pain and another dose of morphine was necessary. About the second or third day later, noticed a bluish discoloration, a bruised appearance around the umbilicus, which has gradually faded. Soreness and pain in the lower abdomen has continued and patient has been in bed since onset. Had not missed any menstrual periods but a bloody flow from the uterus began about the same time as the attack and has continued since. Bowels constipated; has bladder frequency and tenesmus; has had slight fever but not rigors; some mild sweats.

Past History: Youngest child is thirteen years of age; no pregnancies since. No history of similar previous attacks; never suffers unduly at menstrual periods. States she has not been confined to bed on account of illness except for confinement for over sixteen years. Past history otherwise not remarkable.

Family history: Uninteresting.

Physical Examination: Temperature 100° F., pulse 104, respiration 18. General examination shows nothing remarkable aside from the findings in the lower abdomen and pelvis. The upper abdomen is soft and not tender. Whole lower half of abdomen moderately rigid and tender, especially in the lower right quadrant. Bimanual palpation shows fixed uterus, extremely tender; all pelvic organs so tender that nothing could be accurately mapped out. There was an indefinite mass on both sides, seemingly much larger on the right.

Blood: Hemoglobin, 62 per cent; erythrocytes, 3,400,000; leukocytes, 8,500; differential leukocyte

count: small lymphocytes, 13 per cent; large mononuclears, 7 per cent; polymorphonuclear neutrophils, 80 per cent; no malaria found; Wassermann and Kahn tests negative. Urine: trace of albumin; no pus; no blood; no casts; no sugar.

Course: Intra-abdominal hemorrhage from probable rupture of tubal pregnancy was suspected. Patient was put to bed with ice cap to lower abdomen and mild sedatives were given. Steady improvement until the night of April 20 (five days after admission) when she had another sudden sharp attack of pain in the right lower quadrant with signs of another intra-abdominal hemorrhage.

Immediate operation was performed. Low mid-line incision; lower abdomen and pelvis filled with serum and old blood clots; some fresh bright red blood also present. All of pelvic structures densely matted together with recent fibrinous adhesions and clotted blood. Right tube delivered and was about 1½ inches in diameter, greatly swollen and dark red and edematous. Left tube and ovary fairly normal. Uterus small and normal. Coils of small intestine adherent to all the pelvic structures. While separating and lifting these coils of the small intestines from the pelvis, a limb of the small gut was encountered that had no mesentery. This was followed down and with difficulty separated and delivered from the cul-de-sac. It proved to be a Meckel's diverticulum, over ten inches long and originating from the ileum more than twenty-four inches above the ileo-cecal valve. The distal four inches was very edematous and inflamed and appeared to be too acute to risk leaving in the abdomen in spite of the fact that the patient's condition was not good and no more surgery than was actually needed was indicated. The diverticulum was resected, appendix removed, sub-total hysterectomy with removal of right ovary and both tubes was performed.

Microscopic examination showed in blood clot from right tube, a few areas suggesting decidual tissues, much degenerated. Diverticulum showed acute purulent inflammation, most marked at surface.

The patient made an uneventful recovery and was discharged on May 7 (16th post-operative day).

The unusual feature in this case is the finding of an acutely inflamed, unusually large, Meckel's diverticulum adherent to pelvic structures and a ruptured tubal pregnancy. The diverticulum had its origin from the ileum much farther away from the ileo-cecal valve than usual.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

June 2—Eye, Ear, Nose and Throat Hospital Staff, 8 P. M.

June 6—Pathological Conference, Hotel Dieu, 10-11 A. M.

June 9—*Orleans Parish Medical Society*, 8 P. M.

June 10—Baptist Hospital Staff, 8 P. M.

June 11—Touro Infirmary Staff, 8 P. M.

June 13—Pathological Conference, Hotel Dieu, 10-11 A. M.

June 13—French Hospital Staff, 8 P. M.

June 16—Hotel Dieu Staff, 8 P. M.

June 17—Charity Hospital Medical Section, 8 P. M.

June 18—Charity Hospital Surgical Section, 8 P. M.

June 19—I. C. R. R. Hospital Staff, 12 Noon.

June 19—Eye, Ear, Nose and Throat Club, 8 P. M.

June 20—Pathological Conference, Hotel Dieu, 10-11 A. M.

June 23—*Orleans Parish Medical Society*, 8 P. M.

June 27—Pathological Conference, Hotel Dieu, 10-11 A. M.

During the month of May the Society held two scientific meetings and the programs were as follows:

Monday, May 12:

Low Cervical Cesarean Section, with a Review of Cases. By Dr. Hilliard E. Miller. Discussed by Drs. W. E. Levy and E. L. King.

A Study of the Incidence of Rickets in a Group of Children in New Orleans. By Dr. G. Richard Williamson and Rena Crawford. Discussed by Drs. H. E. Miller and Ludo von Meysenbug.

Sterility. By Dr. Joseph Cohen. Discussed by Drs. H. W. Kostmayer and S. Sternberg.

Monday, May 26:

Optic Atrophy. By Dr. M. Earle Brown. Discussed by Dr. Henry Daspit.

Cancer of the Larynx: a. Moving Picture Demonstration of Laryngectomy. b. Presentation of a patient with artificial Larynx. By Dr. R. Clyde Lynch.

The Control of Allergic Cases. By Dr. N. F. Thi-
berge. Discussed by Dr. E. L. Leckert.

Neuralgia, Tic-douloureux, its Treatment by In-
jection of Quinine urea. By Dr. W. A. Lurie.
Discussed by Dr. Z. T. Young.

The membership is advised that the insertion of names in the Blue Book as published by the New Orleans States is unethical.

At the meeting held May 12 a vote was taken to invite the American Medical Association to hold their 1931 convention in New Orleans. This invitation will be submitted at the Detroit Meeting in June.

The History of the Orleans Parish Medical Society is out and is being favorably received by the membership.

A golf tournament for the members of the Society was held May 28 at the Metairie Golf Club. Following this tournament a dinner was held at 7 p. m.

Quite a few members of the Society cooperated in Health Round-Ups at the various schools in the City. These Round-Ups called for examination of children of pre-school age.

The third quarterly installment on the group insurance will be due June 5 and amounts to \$11.25. Kindly send in your check at once. The thirty-day grace period expires July 5. Be sure to send in your check before this date.

TREASURER'S REPORT

Actual Book Balance 3/31/30.....	\$3,710.77
Receipts	1,844.60

\$5,555.37

Expenditures	\$4,073.44
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Actual Book Balance 4/30/30.....	\$1,481.93
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AMERICAN MEDICAL ASSOCIATION, MEETING—June 23-27, 1930.

Dr. H. Theodore Simon, Secretary
Orleans Parish Medical Society.

Dear Doctor:

To those physicians who attend the Convention of the American Medical and Physiotherapy Associations in Detroit on June 23rd to 27th, the Louisville & Nashville Railroad is in position to offer the superior service of its de Luxe train, "The Pan American," which leaves New Orleans daily at 8:30 P. M. and reaches Cincinnati at 9:30 P. M. (E.S.T.) the following evening, where a direct connection is offered for Detroit, leaving Cincinnati at 11:15 P. M. (E.S.T.) and arriving Detroit at 7:30 the next morning. A similar service is also offered for return travel, leaving Detroit at 11:20 P. M. (E.S.T.) and arriving Cincinnati at 7:20

the following morning, where a direct connection is offered with the crack "Pan American," leaving Cincinnati at 10:15 A. M. (E.S.T.) and arriving New Orleans at 9:05 next morning.

Reduced fares will be authorized on the Certificate plan, under which plan the physicians will purchase regular one-way full far tickets from New Orleans to Detroit at fare of \$39.66 and secure a Certificate Receipt from agent for same at time of purchase. If 150 or more of these Certificates are presented to the Secretary of the Convention, in Detroit, he and the special agent for the railroad there will sign same, thereby entitling the holders thereof to return ticket from Detroit to New Orleans at half fare, or \$19.83. This reduction is authorized for passage from New Orleans on any date June 19th to 25th, inclusive, and is available for return passage from Detroit on any date up to and including July 1st.

The Pullman rates from New Orleans to Detroit are: \$12.00 lower: \$9.60 upper and \$42.00 drawing room.

Yours very truly,

E. H. STOLL,
City Passenger Agent.

LIBRARIAN'S REPORT

During April, 1930, 38 books have been added to the Library. Of these 19 were received as gift, 15 from the New Orleans Medical and Surgical Journal, 3 by purchase and 1 by binding. New titles of recent date are listed below.

The illness of Miss Billon has necessitated an immediate vacation for her. This enforced absence has made it imperative to engage help by the day as needed, during this busy season.

New Books:

Graham—Surgical Diagnosis. 2v. 1930.

Beckman—Treatment in General Practice. 1930.

Clough—Diseases of the Blood. 1929.

Hull—Diseases Transmitted from Animals to Man. 1929.

Carey—Bacteriology for Nurses. 1930.

Price—Textbook of the Practice of Medicine. 1930.

Stuart-Low—Care of the Nose, Throat and Ear. 1929.

Kopetzky—Otologic Surgery. 1929.

Woollacott — Nursing of Infectious Disease. 1930.

Potts—Getting Well and Staying Well. 1930.

Wilcox — Materia Medica and Therapeutics. 1929.

Park—Pathogenic Microorganisms. 1929.

Huhner—Disorders of the Sexual Function. 1929.

U. S. Public Health Service—Public Health Laws and Regulations passed during 1927. 1930.

Harvard University—Cancer Commission Report v. 10-12, 14-15, 17, 1922-24, 1926-27, 1929.

American Otologic Society—Transactions. 1929.

American Association of Medical Milk Commissioners. Proceedings. 1929.

Henry Phipps Institute Report. 1929.

Oxford Monographs on Diagnosis and Treatment. v. 7-9. 1930.

H. THEODORE SIMON, M. D.,
Secretary.

ANNUAL REPORT OF THE WOMAN'S AUXILIARY TO THE ORLEANS PARISH MEDICAL SOCIETY.

In speaking to you this year, I have usually done so looking straight into your eyes and down into your hearts, but as this, my annual report, is supposed to be more formal, I have reduced it to writing.

The organization of the Woman's Auxiliary to the Orleans Parish Medical Society was by invitation of the Society, the only way by which we could come into being. This fact gave assurance that the Society felt that there was a function for us to perform, that they needed us and wanted us. Obedient to their request, the first president of the State Auxiliary, Mrs. Oscar Dowling, called for an organization meeting in the Hutchinson Memorial on June 27, 1929. At a subsequent meeting, July 9, 1929, organization was effected, officers elected and constitution and by-laws adopted. Since then, the articles and the constitution and by-laws have been voted on ad seriatum and approved by the general body. During the period of the first year, the Auxiliary

has held seven meetings, the first in the Orleans Club House, the last there also, and five in between, in the homes of members of the Woman's Auxiliary.

Our work thus far has been by way of building up a closer acquaintance among the wives of the doctors belonging to the Orleans Parish Medical Society, cementing the members of the Auxiliary in the bonds of fellowship and good will. This has been easily done, for a decided "esprit de corps" has been noticeable from the start. Our year's association together has been like a pleasant walk along a happy valley, where the new flowers of friendship, the rippling waters of spirited intercourse, and the warm sunshine of congeniality have given us all fresh and delightful experiences. In the coming year, I expect we shall step out into the broad highway where we shall bear some of the heat and burden of the day as we voluntarily assume responsibilities which will make our existence worth something to others as well as to ourselves. It can scarcely be otherwise than that we should be imbued with the spirit of service, since we have lived so close to a body of men who are actuated in their noblest endeavors by love of humanity and a desire to help their fellowman. In any work which we shall undertake, we will be well sustained by the society with which we are affiliated. In conformity to the idea that an Auxiliary is not an independent, but a "helping" organization, one which is subsidiary or necessary—we have awaited the endorsement of the Orleans Parish Medical Society on work which was planned for the first year. After considering our proposed plans over two meetings, the Society has recently sent a letter giving us free rein to work along three lines of endeavor, and pledging their assistance in what we desire to undertake. In her report, which reveals deliberation and wise judgment, Mrs. H. W. E. Walther has told you of the work outlined for the educational group—physical examination of the children of the pre-school age; co-operation with the vocational guidance organization in assisting children of the high school age who are financially unable to attend school; to encourage more schools to subscribe to the health magazine, *Hygeia*. The national president, Mrs. G. H. Hoxie of Kansas City, Missouri, writes that she considers educational work to be undoubtedly the great work of the Auxiliary.

Three requests have come in from three schools for help in the summer health round-up, and in a pre-school survey. After the chairman has been named and after she has chosen her vice-chairman and a group of co-workers, any member of the Auxiliary can communicate with the chairman and signify her willingness to serve in any way in which she may be needed. The same procedure may be followed out with regard to the philanthropic work of the Auxiliary, i. e., any member who feels that she would be particularly interested in the philanthropic work of the organization may indicate her willingness to help. The policy of the philanthropic group is at present more vague than that of the educational and social groups. Small yearly dues give at most a small treasury, but we must always remember that one of our expressed aims is to work in conjunction with other organizations. This is especially desirable and quite practicable in New Orleans where philanthropic work is so thoroughly organized. We may serve as connecting link between other charitable bodies and the needy one who may appeal to us for help. Such was the case in regard to the medical student who needed money for tuition this spring, who knew of nowhere to turn but to our organization, and who through the agency of the philanthropic committee received the assistance which he so sorely needed. A Jewish proverb says, "He who causes others to give, gives himself," so we may justly consider this piece of philanthropy to be the outcome of our work. We must also bear in mind that in our Commemoration Fund lies a possible source of income. This is that fund to which voluntary contributions are made in commemoration of a happy event in our lives; as also, of some serious circumstance, such as a sacred sorrow, which causes our hearts to overflow, and moves us to do something for others.

The work of the social group has been the great accomplishment of the first year of our existence. It was the first work which needed to be done, and that it was well done in every one of its departments is fully attested by the results obtained through Mrs. John H. Musser, chairman; her four associates and their committee members. A membership of 242 members built up in the course of a few brief months is a phenomenal achievement, and too much credit cannot be given to Mrs. S. M. Blackshear and her associates who

were so thorough in their canvas and so winning in their manner of invitation as to secure such remarkable results. I wonder if any other Auxiliary in any other State has ever had such a phenomenal growth. The telephone committee, under the leadership of Mrs. Chaille Jamison, is deserving of a sincere note of thanks for arduous duties faithfully performed. No small matter to reach by telephone each member of a large group for every meeting! It meant repeated calls, most unselfish service, and could only have been repaid by the splendid attendance which was the direct result of their efforts. The courtesy committee, with Mrs. W. H. Seeman as chairman, showed that it understood indeed the meaning and worth of kindness and graciousness towards others. Visits to those who were glad, as well as to those who were sad; visits to the sick in hospitals; visits to the stranger within our gates; flowers to visitors belonging to the medical fraternity; these and other thoughtful expressions have set a good precedent to be followed in the future. The entertainment committee, with Mrs. Homer Dupuy as chairman, and Mrs. Thos. Walshe as vice-chairman, was small, but very efficient. The musical programs secured by them were varied and delightful. The homes opened through them for five general meetings denote a spirit of hospitality which was unbounding. That the hostesses and co-hostesses could entertain such large gatherings with such ease and graciousness was a matter of marvel. The meetings in the spacious and beautiful homes of Mrs. Ernest E. Allgeyer, Mrs. W. H. Seeman, Mrs. Chaille Jamison, Mrs. Thos. Walshe and Mrs. I. I. Lemann were thoroughly delightful and will stand out in our memories as worthy of our lasting appreciation.

The program committee, composed of Mrs. I. I. Lemann, Mrs. C. Jeff Miller and Mrs. J. A. Storck, planned an interesting program which was well carried out with the assistance of our doctor friends, Dr. C. Jeff Miller Dr. Homer Dupuy, Dr. G. Farrar Patton and Dr. Colby Rucker. The coming of these doctors before the auxiliary emphasized the mutual interests and the inter-rela-

tion of the Orleans Parish Medical Society and the Woman's Auxiliary. Publicity was handled by Mrs. Chaille Jamison in a dignified way, and served its purpose in arousing interest in our organization.

As I have been merely your presiding officer and cannot take any credit for the great amount of good work accomplished, I may be permitted to say frankly and freely that I do not think that any other organization has ever been better officered than our young Auxiliary. Our able secretary, Mrs. A. L. Levin, who has been helpful both in and outside the sphere of her responsible duties; our careful and capable treasurer, Mrs. Geo. Taquino; our efficient corresponding secretary, Mrs. H. Theodore Simon, and our able parliamentarian, Mrs. John G. Pratt, have all been faithful to the obligations of their offices. I could conceive of nothing better than retaining all officers in their respective positions, for we have worked together in a spirit of perfect harmony and wholehearted co-operation. However, rotation in office is a policy which is becoming more and more general. While it is well to retain some officers for the continuance of policies and the carrying out of plans under way, still it is wise to bring in fresh workers, for each person has a different viewpoint and a new version which makes for growth in an organization. Whatever changes have been made by the nominating committee or may be made, are based, or shall be based, on this consideration alone.

As I close my report for the first year's activities of the Woman's Auxiliary to the Orleans Parish Medical Society, I wish to thank every one of you for the active work which you have done, or for the interest and enthusiasm which you have shown. It is one of the high spots of my life to have had the honor of being your president. As I have learned to know you, I have learned to love you; and when you have told somebody you love them there isn't anything else to say.

Respectfully submitted,

(Signed) MRS. J. A. STORCK.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

REPORT OF HOUSE OF DELEGATES TO GENERAL ASSEMBLY.

To the Officers and Members, General Assembly,
Louisiana State Medical Society, 1930, Shreve-
port, La.

Gentlemen:

During the Annual Session of the State Medical Society your House of Delegates has held two meetings and transacted the following business:

In memory of Dr. Louis Abramson, a long and valuable member of organized medicine whose unfortunate death removed him from his activities, the House stood silent for two minutes. A Committee was appointed by the House of Delegates to represent them at the funeral.

The reports of the officers, councilors and various committees were properly submitted and as a result of the recommendations many constructive features were provided.

Provisions were made for the removal and equipping of our new offices in the New Hutchinson Memorial Building of Tulane University at Tulane and Loyola Streets, New Orleans.

The Fund allotted to the Walter Reed Memorial Fund, having reached its quota, was directed to be used in the future by the Committee on the Care of Indigent Physicians.

It was decided that the personal contributions of some twenty of our members made at the last meeting of the State Society should be considered by our organization as merely a loan to tide over any financial distress as a result of publishing the history of the Louisiana State Medical Society by Dr. Rudolph Matas. They reaffirmed their desire to finance and support the history as being prepared and which shortly will be published. The Secretary-Treasurer was instructed to reimburse Dr. Matas from the General Fund any personal expenditures which he had made up to date.

It was reaffirmed that the Committee on Scientific Work should be empowered to issue to out of state guests invitations to appear on the program, and urged that a most stringent effort be made to follow out this policy. Also essayists were

requested to read their respective papers under the Section in which their papers deal.

Several matters of importance in regard to the activities of our Committee on Public Policy and Legislation were considered. They went on record as favoring the repeal of the State Narcotic Law and in opposition to the Porter Bill enlarging the provisions of the Harrison Narcotic Act, and to the Jones-Cooper Maternity Act which in principle extends the functions of the former Sheppard-Towner Act which expires by limitation. They endorsed the model caustic soda bill which had been endorsed by the American Medical Association, with the idea of having a uniform bill throughout the various states for the control of the sale and disposing of dangerous caustics to the public.

According to the recommendations of the Budget and Finance Committee and the Committee on Medical Defense, our Medical Defense Fund was increased 50c per capita per year until said fund reaches \$10,000. Provisions were made for an additional stenographer to the Secretary-Treasurer's and General Manager's office to take care of the unprecedented growth of work in this Department.

Following the report of our Journal Committee, they recommended that efforts should be exerted to retain the contract for the publishing of the proceedings of the Mississippi State Medical Association, and to support the proposed plans and activities of the Journal Committee to secure contract with the Alabama State Medical Association for the publication of their proceedings.

Following the report of the Walter Reed Memorial Committee it was voted to make this Committee a permanent Committee to develop ways and means of establishing a suitable memorial in keeping with their recommendations.

Dr. J. E. Knighton was nominated to fulfill the vacancy which will occur on the State Board of Medical Examiners in August, 1930. The name of Dr. R. G. Douglas was also recommended in order to conform with the law concerning recommendations for appointment on this Board.

Amendment to the cahrtter was passed creating members at large, with the object in view of

having Army, Navy and other medical officers of the United States Government avail themselves of membership in organized medicine if so desired.

The House went on record by resolutions as favoring the passage of a law by the General Assembly of the State of Louisiana looking toward tick eradication in our State.

A resolution taking recognition of the increase in crime and the reduction of same was referred to our Committee on Public Policy and Legislation, as was similar action taken looking toward the protection of the public against carbon monoxide gas poisoning in certain localities and under certain conditions in our State.

Resolutions recommending the establishment in Washington of an institute of hygiene were adopted, and instructions issued to send a copy of same to our Senator Ransdell at Washington.

Amendment to the charter was offered providing for the retention of our Ex-Presidents as an Advisory Board to the House of Delegates, with all the privileges excepting voting on constitutional offices.

They unanimously endorsed the plan of the George Washington Bicentennial for a national celebration of the birth of George Washington to take place in 1932.

The following resolutions were offered and unanimously adopted:

Whereas, members and guests of the Louisiana State Medical Society who have been in attendance upon the 1930 meeting in the City of Shreveport are deeply appreciative of the many courtesies received, we beg to submit the following:

Be it resolved, That we extend most sincere thanks to the officers, Dr. Robt. G. Douglas, President, and members of the Shreveport Medical Society for their untiring and most effective efforts to make our stay in their midst pleasant and profitable, and especially do we wish to thank Dr. J. M. Bodenheimer, the efficient Chairman of the Arrangements and Entertainment Committee, for contributing so much to our comfort and pleasure as well as to the success of the scientific and business programs.

Be it further resolved, That we extend our thanks to the Washington-Youree Hotel, Mr. Kile, Mr. Prowledge and Mr. Dietz, the efficient man-

agers of these hotels, for the pleasant and splendid manner in which they have taken care of us.

Further resolved, That we are deeply grateful for the delightful hospitality and sumptuous luncheons tendered the members of the Louisiana State Medical Society by the Shreveport Charity Hospital, Dr. E. L. Sanderson, the Shrine Hospital, Dr. H. A. Durham, the Highland Sanitarium, Drs. Hendrick-Lloyd and Company, the Tri-State Sanitarium, Drs. Willis-Knighton and Company, and the Schumpert Sanitarium, Sisters of the Incarnate Word.

Be it further resolved, That our thanks be extended to the Shreveport Times and the Shreveport Journal for the generous space devoted to our proceedings in their publications.

Be it further resolved, That our thanks be extended to the Ladies' Entertainment Committee, Mrs. W. S. Kerlin, Chairman, and her able group of assistants, and to the Broadmoor Golf Club, the Shreveport Country Club, Y. M. C. A., Elks, Columbia Club, the Woman's Department Club, for having made our stay in Shreveport so pleasant.

Be it further resolved, That our thanks and appreciation be extended to our Retiring President, Dr. Frank T. Gouaux, for his devotion and energetic efforts which have contributed to the successful history of our Society for the past year.

Be it further resolved, That we extend our most profound thanks to our worthy and efficient Secretary, Dr. P. T. Talbot, for the splendid manner in which he has conducted the affairs of his office, which has been evidenced by the outstanding progress manifested in our Society, and the high character of our scientific program offered at our present meeting.

Be it further resolved, That we give expression of our appreciation for the splendid executive ability displayed by the speaker of the House of Delegates, Dr. J. J. Ayo, whose expeditious and impartial rulings have greatly facilitated the work of that body.

That our thanks also be extended to our Assistant Secretary-Treasurer, Miss Mary Crossen, for her devotion to duty and the deep interest she has manifested in the discharge of her work at all times.

Dr. H. B. Gessner, as President-Elect, automatically becomes the President of the Louisiana State Medical Society following this meeting.

The following officers and committees were nominated and duly elected:

President-Elect—Dr. S. C. Barrow, Shreveport.

First Vice-President—Dr. S. J. Couvillon, Moreauville.

Second Vice-President—Dr. C. A. Weiss, Baton Rouge.

Third Vice-President—Dr. A. G. McHenry, Monroe.

Secretary-Treasurer—Dr. P. T. Talbot, New Orleans.

First District—Dr. H. E. Bernadas, New Orleans.

Second District—Dr. D. N. Silverman, New Orleans.

Fourth District—Dr. J. B. Benton, Minden.

Fifth District—Dr. C. P. Gray, Monroe.

Committee on Scientific Work—Dr. P. T. Talbot, Chairman; Dr. A. E. Fossier, Dr. Elizabeth Bass; all of New Orleans.

Committee on Public Policy and Legislation—Dr. B. A. Ledbetter, Chairman; Dr. E. L. Leckert, Dr. Roy B. Harrison, Dr. H. B. Gessner and Dr. P. T. Talbot; all of New Orleans.

Committee on Publication—Dr. P. T. Talbot, Chairman; Dr. Chas. Chassaignac, Dr. Jules Dupuy; all of New Orleans.

Committee on Medical Defense—Dr. R. O. Simons, Chairman, Alexandria; Dr. E. L. Sander-son, Shreveport; Dr. P. T. Talbot, New Orleans.

Committee on Hospitals—Dr. Chas. Chassaignac, Chairman, New Orleans; Dr. J. L. Scales, Shreveport; Dr. O. P. Daly, Lafayette; Dr. C. P. Gray, Monroe; Dr. A. J. Comeaux, Youngsville.

Committee on Health and Public Instruction—Dr. W. H. Seemann, Chairman, New Orleans; Dr. F. R. Gomila, New Orleans; Dr. G. M. G. Stafford, Alexandria; Dr. J. Q. Graves, Monroe; Dr. J. K. Griffith, Slidell.

Committee on Journal—Dr. H. W. Kostmayer, Dr. S. M. Blackshear, Dr. Randolph Lyons, Dr.

W. H. Seeman, Dr. John Lanford; all of New Orleans.

Delegate to American Medical Association—Dr. W. H. Seemann, New Orleans.

Alternate to American Medical Association—Dr. Arthur Herold, Shreveport.

Dr. E. L. Leckert was reappointed on the Committee on Budget and Finance for a term of three years by the Chairman of the House of Delegates.

Dr. J. J. Ayo was unanimously re-elected as the Speaker of the House of Delegates.

New Orleans, Louisiana, was voted as the next place of meeting in 1931, the dates to be determined by the Executive Committee.

Respectfully submitted,

P. T. TALBOT, M. D.,
Secretary-Treasurer.

NEWS ITEMS.

The following members of the faculty of the Graduate School of Medicine of The Tulane University of Louisiana participated in proceedings of the Louisiana State Medical Society held at Shreveport, Louisiana, April 29, 30, and May 1, 1930: Dr. W. O. Bethea, who presented a paper on the Treatment of Hyochloridia; Dr. H. Daspit, on The Immediate Handling of Sciatic Pain; Dr. E. Denegre Martin, Treatment of Fractures of the Pelvis; Dr. D. N. Silverman, The Digestive Tract in Pernicious Anemia. Dr. Rudolph Lyons participated in open discussions. Dr. J. E. Landry was also in attendance at this meeting.

Dr. Allan C. Eutis of the Graduate School of Medicine of The Tulane University of Louisiana was a guest of the Medical Section of the Texas State Medical Society at their meeting held at Mineral Wells May 5 to May 8, and addressed the group on Diagnosis and Treatment of Liver Dysfunction.

Dr. O. W. Bethea of the Graduate School of Medicine of The Tulane University of Louisiana was absent from the city from May 6 to May 15, to attend a convention for the revision of the United States Pharmacopedia at Washington, D. C.

Dr. Urban Maes of the Graduate School of Medicine of The Tulane University of Louisiana attended the meetings of the American Surgical Association and the American Association for Thoracic Surgery held at Philadelphia, May 3.

Prof. W. J. Durel of the Graduate School of Medicine of The Tulane University of Louisiana attended a meeting of the American Sanatorium Association as well as the meeting of the National Tuberculosis Association held at Memphis, Tenn., May 12 to May 14, 1930.

THE ANNUAL MEETING OF THE WOMAN'S AUXILIARY OF THE AMERICAN MEDICAL ASSOCIATION.

The Editor of the Journal is in receipt of an announcement from Mrs. A. A. Herald of Shreveport concerning the Annual Meeting of the Woman's Auxiliary of the American Medical Association in Detroit, June 23. Mrs. Herold urges the wives of all the Louisiana doctors attending this meeting to become affiliated with the Woman's Auxiliary. In the Mississippi Section of the Journal will be found a detailed program of the meeting of the Woman's Auxiliary. This is not placed here in order to avoid duplication.

THE JOHN PHILLIPS MEMORIAL PRIZE.

The American College of Physicians announces the John Phillips Memorial Prize of \$1500.00, to be awarded for the most meritorious contribution in Internal Medicine and sciences contributing thereto, under the following conditions:

(1) The contribution must be submitted in the form of a thesis or dissertation based upon published or unpublished original work.

(2) It must be mailed to the Executive Secretary of the American College of Physicians on or before August 31, 1930.

(3) The thesis or dissertation must be in the English language, in triplicate, in typewritten or printed form, and the work upon which it is based must have been done in whole or in part in the United States or Canada.

(4) The recipient of the prize would be expected to read the essay at the next Annual Meeting of the College, after which he would be officially presented with the prize by the President.

(5) The College reserves the right to make no award of the prize if a sufficiently meritorious piece of work has not been received.

(6) The announcement of the Prize winner will be made not later than two months before the Annual Meeting.

AMERICAN COLLEGE OF PHYSICIANS.

E. R. LOVELAND, Executive Secretary,
133-135 S. 36th St., Philadelphia, Pa.

Dr. Curtis Rosser announces the 31st Annual Meeting of the American Proctologic Society to be held in Buffalo, June 22, 23, 24, with headquarters at the Statler Hotel. This meeting will immediately precede the American Medical Association Meeting in Detroit.

THE AMERICAN ASSOCIATION FOR THE STUDY OF GOITER.

The Annual Meeting of this organization will be held July 10 and 11 in Seattle, Washington, and on July 12 the members will move to Tacoma, Washington. An unusually interesting program has been prepared. Some thirty-four speakers from all over the United States and Canada will participate. The list of speakers includes practically all of the men well known for their study of thyroid disease.

SPRING CONFERENCE, DALLAS SOUTHERN CLINICAL SOCIETY.

A total registration of 1,012 was reached in the Spring Conference of the Dallas Southern Clinical Society at the Baker Hotel, Dallas, April 14 to 18, inclusive. The visitors (exclusive of the guest speakers) came from ten Southern states, ranging from New Mexico to Virginia. Guest speakers who appeared daily on the program, included Drs. Logan Clendening, Kansas City; Geo. W. Crile, Cleveland; Vilray P. Blair, St. Louis; Francis M. Pottenger, Monrovia, Calif.; Frank Hinman, San Francisco; J. L. More, Boston; C. L. Scudder, Boston; J. F. Barnhill, Indianapolis; Otto H. Schwarz, St. Louis; C. C. Sturgis, Ann Arbor, Mich.; A. B. Moore, Rochester, Mnn.

PROPEDEUTIC MEDICAL CLINIC.

Ten lectures on the diseases of the lung with roentgen-ray projections and anatomical specimens, each lecture being followed by practical

demonstrations by MM. Bordet, Turpin, Kourilsky and Benda, occupying the positions of former clinical chiefs and clinical chiefs of the clinic.

Lectures will take place from October 20 to October 25, inclusive.

The afternoon will be devoted to theoretical lectures (from 2:30 p. m. to 3:30 p. m., and from 4 p. m. to 5 p. m.).

In the morning practical demonstrations will be held in the wards under the guidance of Professor Sergent.

A certificate, signed by the Professor and the Dean of the Faculty of Medicine of Paris, will be delivered after the course to every doctor who has attended it regularly.

For further information and registration, apply to the "Association pour le Développement des Relations Médicales," Salle Déclard, Faculté de Médecine, Paris 6^e.

THE HEALTH OF NEW ORLEANS.

During the week ending April 26, 1930, 172 deaths occurred in the City of New Orleans, with a death rate of 20.9, 12 of these deaths occurring in children under one year of age. During the corresponding week of 1929 the mortality rate was 16.6. During the next week, May 3, there were 154 deaths in the City, 13 of which were in children under one year of age. The death rate corresponded exactly to the figures of 1929. During the week ending May 10, the death rate had fallen considerably. There were 137 deaths, giving a rate of 16.6. Seventeen deaths were in children under one year of age. During the corresponding week last year the deaths totaled 155. The death rate for the first 19 weeks of the year is 20.6, as contrasted with 21. last year. The death rate in the City of New Orleans is almost the highest of any City in the United States. To contrast a few other cities we find the death rate in Kansas City to be 12.8, in Louisville, 13.8, in New York, 14.2, Philadelphia, 13.3, St. Louis, 13., and Richmond, 15.3.

ST. TAMMANY PARISH MEDICAL SOCIETY.

St. Tammany Parish Medical Society met in regular monthly session at the Community Hall at Mandeville, La., May 9, 1930, 8 P. M. with

the following members present: Dr. H. E. Gautreaux, Pres.; Dr. H. D. Bulloch, Secretary; Drs. Griffith, Polk and Singleton of Slidell; Drs. F. F. Young, Roland Young and W. L. Stevenson of Covington; Drs. Paine, Maylie and Lawrence Young of Mandeville.

Invited guests: Drs. Chaille Jamison and Dr. H. W. Kostmayer of New Orleans.

The reading of the minutes was dispensed with, and the scientific program was next in order and the Chair in a few well chosen remarks introduced Dr. Chaillé Jamison of New Orleans who chose to speak about Hypertension. The Doctor, in his usual entertaining manner, covered the subject very fully, bringing to light the very latest ideas as to treatment, etc. After a limited discussion by the membership, Dr. H. W. Kostmayer of New Orleans was asked to speak. Dr. Kostmayer spoke of "Retro-displacements," speaking of the methods employed twenty years ago and those used today, bringing out the great improvement.

The Society gave Dr. Jamison and Dr. Kostmayer a standing vote of thanks for the trouble they had gone to, to come over to Mandeville to improve our knowledge and entertain us.

The Secretary brought out the fact that the Doctors of New Orleans have been very kind to accept our invitation to appear before us, from time to time, and that the members of the Society were actually getting some good Postgraduate instructions and felt very grateful for same.

Dr. Jamison suggested that in referring cases to the medical service in the Charity Hospital, that it might be of value to us to follow up these cases by requesting a complete report on said case and that he would be glad to have us furnished with such a report, which would enable us to know just what procedure was taken in arriving at diagnosis, treatment, etc. The suggestion was well received and will no doubt be carried out, in the future.

Meeting adjourned to meet next month in Covington.

H. D. BULLOCH, Sec.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

S. S. Lippincott, Editor

H. L. Rush, Associate Editor

D. W. Jones, Associate Editor

TRANSACTIONS OF THE HOUSE OF DELEGATES, 1930.

The twenty-seventh annual session of the House of Delegates of the Mississippi State Medical Association met in the Auditorium of the Y. M. C. A., Vicksburg, May 13, 1930, at 8:15 a. m., President H. A. Gamble of Greenville, in the Chair. Roll call showed thirty-three members present.

E. F. Howard was elected a member of the Committee on Budget and Finance to succeed himself.

The following report of the Secretary was read:

To The House of Delegates, Mississippi State Medical Association, Vicksburg, Mississippi:
Gentlemen:

The Membership of the Association for 1929 was just a few in excess of one thousand. This is somewhat short of the 1928 record. The committee appointed in 1928 to investigate the feasibility of establishing a State Medical Journal was continued for one year, and should make a report at this session.

The following proposed changes in the Constitution introduced at the 1929 session should come up at this session for disposition:

"Article VI, Section 1. The officers of this Association shall be a President, a President-Elect, three Vice-Presidents, a Secretary, a Treasurer, an Historian, an Editor, and nine Councilors.

"Section 2. (Second sentence). The Secretary, Treasurer, Historian, Editor and Councilors shall be elected for terms of five years, etc.

"Article VII. The House of Delegates shall be the legislative and business body of the Association and shall consist of (1) delegates selected by the component county societies, (2) the Councilors, (3) the Historian, (4) the Editor, (5) Ex-Officio, the President, the President-Elect, the three Vice-Presidents, the Secretary and the Treasurer of the Association, and (6) all Ex-Presidents, provided they still be members of the Association."

The committee appointed at the 1929 session to look into the advisability of adding a Section on Hospitals to the Scientific Sections was continued for one year and should make its final report at this session.

A charter was issued during the year to the Pike County Medical Society.

Respectfully submitted,

May 13, 1930.

T. M. DYE, Secretary.

The financial report of the Treasurer was read by E. F. Howard, and was automatically referred to the Committee on Budget and Finance, as was also the financial report of the Secretary.

At this point a recess of five minutes was had for the selection of the Nominating Committee, the result being as follows:

First District.....	J. W. Lucas
Second District.....	A. J. Weissinger
Third District.....	G. S. Bryan
Fourth District.....	W. H. Curry
Fifth District.....	W. H. Scudder
Sixth District.....	I. W. Cooper
Seventh District.....	H. L. McKinnon
Eighth District.....	L. D. Dickerson
Ninth District.....	W. A. Dearman

The Committee on State Medical Journal made its report through D. W. Jones. This report advised against the establishing of a State Journal at this time. On motion the report was accepted and the committee discharged.

On motion the Secretary was authorized to renew the contract with the N. O. Medical and Surgical Journal for two years.

J. W. D. Dicks reported for the Committee appointed to look into the advisability of adding a Section on Hospitals to the Scientific Sections recommending that the section not be added. The report was accepted and the committee discharged.

The Constitutional changes proposed in 1929 were brought up and passed. E. F. Howard introduced the following proposed change in the By-Laws:

"Amend Chapter VI, Section 2, by adding the word 'Elect' following the word 'President' wherever it occurs in this section."

John C. Cully was appointed by the President to act on the Budget and Finance Committee during the absence of Albert Hand, whereupon the House adjourned to meet again on Thursday following the final adjournment of the Scientific Sessions.

Persuant to adjournment the House reconvened at 12:10 Thursday afternoon, May 15th, President Gamble presiding. Roll called showed fifty-six present.

The minutes of the preceding session were read and approved. W. L. Little reported for the Committee on Budget and Finance as follows:

To The House of Delegates,

Mississippi State Medical Association.

Gentlemen:

Your committee has audited and approved the accounts of the Secretary and of the Treasurer.

We recommend that the Treasurer's bond be increased to fifteen thousand dollars (\$15,000.00).

We recommend that the following accounts be allowed:

Committee on Public Policy and Legislation:

I. W. Cooper.....	\$100.00
F. J. Underwood.....	351.50
D. W. Jones (Secretary Council).....	10.00
We suggest the following budget for 1930-31:	
President's Expense Account.....	\$ 100.00
Secretary's Salary.....	500.00
Secretary's Expense.....	100.00
Editor's Expense.....	300.00
Historian's Expense.....	100.00
Council's Expense.....	100.00
N. O. Medical & Surgical Journal....	1000.00
Transactions	100.00
Incidentals	50.00
Expenses Annual Meeting.....	300.00
<hr/>	
Total	\$2650.00

Signed,

W. L. LITTLE,
E. F. HOWARD.

The above report of the Budget and Finance Committee was adopted. The Committee on Public Policy and Legislation made its report through F. J. Underwood, which report was adopted. (See Exhibit D).

Henry Boswell offered a resolution of thanks for the splendid entertainment given by the Issaquena-Sharkey-Warren County Medical Society, which resolution was adopted by a rising vote.

On motion of W. H. Frizell the House stood with bowed heads for one minute out of respect to our dead.

The Council made its report through its Secretary, D. W. Jones which report was adopted. (See Exhibit C).

The Nominating Committee reported as follows:

To The House of Delegates,
Mississippi State Medical Association:

Gentlemen:

We, the Nominating Committee, after due consideration, beg to submit the following nominees:

For president: E. F. Howard, W. H. Anderson, W. L. Little.

For President-Elect: J. C. Culley, J. W. D. Dicks, R. H. Foster.

For Vice-President: C. W. Patterson, M. J. L. Hoye, L. L. Polk.

For Councilor Second District: L. L. Minor.

For Councilor Third District: M. W. Robertson.
Delegate, A. M. A.: H. A. Gamble. Alternate: Henry Boswell.

Fraternal Delegate: Arkansas, E. L. Wilkins; Louisiana, L. S. Lippincott; Alabama, V. B. Philpot; Tennessee, A. L. Emerson.

Historian: P. W. Rowland.

Editor: L. S. Lippincott.

Associate Editor, One Year: H. L. Rush; Two Years, D. W. Jones.

Signed,

G. S. BRYAN, Chairman,
W. A. DEARMAN, Secretary.

W. L. Little and W. H. Anderson, rising on points of personal privilege, asked that their names be withdrawn as nominees for President, whereupon on motion the Secretary cast the vote of the House for E. F. Howard.

C. C. Hightower withdrew the name of R. H. Foster, and ballots were prepared for the other nominees for President-Elect, resulting in the election of J. C. Culley.

While the ballots were being prepared for the above vote a motion was sustained that the Secretary cast the vote of the House for the remaining nominees.

Meridian, Greenville and Jackson were nominated for the 1931 meeting place. Jackson was selected.

D. C. Montgomery was elected a member of the Committee on Budget and Finance to succeed E. F. Howard who had just been elevated to the Presidency.

The House adjourned to meet in Jackson at eight o'clock on the morning of the second Tuesday in May, 1931.

Signed,

T. M. DYE, Secretary.

IMPORTANT NOTICE

The Mississippi State Board of Health announces that the examination for license to practice medicine will be held at Jackson, Miss., in House of Representatives, New Capitol Building, Thursday and Friday, June 26 and 27, 1930.

Write at once for examination blank and instructions. Send or bring your diploma for verification.

FELIX J. UNDERWOOD, M. D., Secretary.

R. N. WHITFIELD, M. D., Asst. Secretary.

ISSAQUENA-SHARKEY-WARREN COUNTIES MEDICAL SOCIETY

Because of the meeting of the Mississippi State Medical Association, no meeting of the Issaquena-Sharkey-Warren Counties Medical Society was held in May.

In place of the regular June meeting, the Society will join with the Fifth District Medical Society of Louisiana for a joint meeting at Monroe and Sterlington. Dr. C. L. Mengis, President and Dr. Frank P. Rizzo, Secretary, of the Fifth District Society have issued personal invitations to the members of the Issaquena-Sharkey-Warren Counties Society. Several excellent papers and many entertainment features are planned. The date of the joint meeting is Tuesday, June 10.

VICKSBURG SANITARIUM

The regular monthly meeting of the staff of the Vicksburg Sanitarium was held on May 10. After a general business session which included Reports from the Records Department and analysis of the work of the hospital, the following special case reports were made:

1. Ruptured Tubal Pregnancy with Complicating Meckel's Diverticulitis.—Dr. G. M. Street.

2. Acute Traumatic Osteomyelitis of the Cranium with Extradural Abscess.—Dr. J. A. K. Birchett, Jr.

Dr. A. Street presented reports of the recent meetings of the Louisiana State Medical Society at Shreveport and of the Illinois Central R. R. Surgeons at Memphis.

Dr. Clark made a special report on "Some Factors in Thoracic Pain."

Selected radiographic studies were shown as follows: Epiphyseal separation of the lower humerus with backward dislocation; fracture-dislocation of the ankle joint; impacted fracture of hip; fracture of the bodies of the ninth and

tenth thoracic vertebrae; cholelithiasis; calcified lymph nodes simulating ureteral calculus; ureteral calculus; nephrolithiasis (2 cases).

The meeting adjourned after a lunch.

Dr. A. Street, Vicksburg, attended the recent meeting of the Louisiana State Medical Society at Shreveport as the fraternal delegate from the Mississippi State Medical Association. Dr. J. S. Ullman, Natchez, who was elected fraternal delegate at the 1929 meeting of the Mississippi State Medical Association, was unable to attend the meeting.

WINONA DISTRICT MEDICAL SOCIETY

From Dr. Edward C. O'Cain, Winona:

"The Winona District Medical Society held its regular meeting at the Wisteria Hotel March 17, with Dr. E. C. O'Cain, Winona, President and Dr. J. K. Avent, Grenada, Secretary.

"This was the best meeting in the history of the organization from the standpoint of attendance and enthusiasm. Every county in the district was well represented and there were guests and visitors from Jackson, Greenville, and Memphis, Tenn.

"Those appearing on the program were: Dr. Hugh Gamble, President of the Mississippi State Medical Association; Dr. Frank Hagerman, Jackson; Dr. R. E. Wilson, Greenville; Dr. Gilbert Levy, Memphis, Tenn.

"The Society sent personal representatives to each doctor in Holmes and Attala counties inviting them to join the Winona District Society and without a single exception this invitation was accepted and a petition will be presented to the State Medical Association for this annexation. This will give the Winona District the territory and the material for one of the best societies in the state."

ANDERSON INFIRMARY

The regular Staff Meeting of the Anderson Infirmary, Meridian, was held May 9. After the regular business of the Staff and the report from the Records Department for the month of April, the following special papers and reports were presented:

1. Cholelithiasis.—Dr. T. D. Bourdeaux.

2. Some Statistics on Malignancies of the Uterus and Adnexa.—Dr. C. R. Stingily.

Dr. H. F. Tatum is President of the Staff.

AMERICAN ASSOCIATION FOR THE STUDY OF GOITRE

Dr. A. G. Payne, Greenville Councilor for Mississippi of the American Association for the Study of Goitre has announced that the annual meeting of the Association will be held in Seattle, Washington, on July 10 and 11. Dr. Payne would be pleased to hear from any members of the Mississippi State Medical Association who are interested in this important subject.

NORTH MISSISSIPPI SIX COUNTY MEDICAL SOCIETY

Dr. A. H. Little, Secretary of the North Mississippi Six County Medical Society sends the following:

"I am enclosing about the only, and in my opinion, the biggest bit of news from the North Mississippi Six County Medical Society for the current month.

"It will hardly be possible for me to come down to the State Meeting this time."

Enclosure:

Announcing the Arrival of Our Baby:

Robert Ashford.
Weight, 7½ pounds.
Date, May 5, 1930.
Dr. and Mrs. A. H. Little

The above was submitted to Dr. J. A. K. Birchett, Jr., Vicksburg, and he comments: "I call that a very commendable piece of news. As a censor I pass on it."

Dr. Cooper, please take notice.

STATE DEPARTMENT OF HEALTH

The following were visitors to the State Department of Health at Jackson during the month of April: Dr. R. C. Williams, U. S. Public Health Service, Washington, D. C.; Dr. J. J. Durrett, Chief, Drug Control Division, Department of Agriculture Washington D. C.; Mr. N. H. Moore, Registrar Vital Statistics Department, State Board of Health, Oklahoma City, Oklahoma; Dr. D. T. Nowden, Director of Laboratories and Rural Sanitation, State Board of Health, Oklahoma City, Oklahoma.

WOMEN'S AUXILIARY OF A. M. A.

Mrs. M. H. Bell, President of the Women's Auxiliary of the Mississippi State Medical Association, at its meeting in Vicksburg in May, urged attendance at the Annual Meeting of the National Auxiliary to be held in Detroit, June 23-27. Mrs. Bell has furnished the following information in regard to this meeting:

"Plans for the annual meeting of the national Auxiliary in Detroit, June 23-27, come on apace. The Auxiliary as an organization is occupied only with business affairs, and has nothing whatever to do with any social gatherings except the official Auxiliary luncheon. Its members are Mrs. William Gerry Morgan, D. C.; Mrs. Olin West, Ill.; Mrs. L. T. Harris, Mich.; Mrs. Walter Jackson Freeman, Pa., and Mrs. Southgate Leigh, Va., Chairman. Mrs. Basil Loren Connelly is chairman of the Detroit committee for the convention proper, and Mrs. Burt Shurley of the social activities.

"The roof garden of the Hotel Tuller, next to the Statler, will be headquarters for all Auxiliary business-registration, meetings, etc., and the Auxiliary luncheon on Tuesday, June 24. There will be no registration fee, but members will buy their own luncheon tickets—\$1.50. The registration bureau will be open Monday, Tuesday and Wednesday, June 23, 24, 25, from 9 to 4, Thursday and Friday, June 26, 27, from 9 to 12. Programs, badges, etc., may all be procured here, and invitations, tickets and transportation cards must all be procured here in advance, as only programs may be procured elsewhere.

"The meetings, as you all know, are open to every woman attending the Convention, and under Mrs. Hoxie's leadership they are bound to be well worth the trip. There will be three morning sessions Tuesday, Wednesday and Thursday, June 24, 25, 26. The afternoons and evenings are all left free for sight-seeing and social activities, for which many plans are in the making. Details have not yet been announced, but they include motor and boat excursions, and visits to some of the handsome private estates in the environs, including that of Mr. Henry Ford. The Detroit Museum of Art is among the best in the United States. No parties have been scheduled during business hours.

"No one may represent her state in any capacity whose State dues are not fully paid. The chairman of the Committee on Credentials and Registration is Mrs. Ledru Otway Geib, 3860 St. Clair Avenue, Detroit.

"Only delegates may take an active part on the floor of the convention, but alternates should attend all sessions and hold themselves in readiness to take their delegates' place if necessary. All resolutions must be in writing and signed, and in the hands of the committee 24 hours before the session at which they are to be presented. Mimeographed copies will be distributed to the delegates as they take their seats. The chair-

man of the Committee on Resolutions is Mrs. Augustus S. Kech, 218 Logan Avenue, Altoona, Pennsylvania."

PROGRAM.

Monday, June 23, 2:30 p. m. Meeting of the Board of Directors—Statler Hotel. All state presidents and presidents-elect are asked to time their arrival and stay in Detroit so as to be able to attend the Pre-Convention and Post-Convention Board Meetings.

Tuesday, June 24, 9:00 a. m. Registration. Auxiliary Headquarters—Hotel Tuller.

9:30 a. m. Business Meeting.

1:00 p. m. Luncheon, Hotel Tuller Roof Garden. Speakers will be announced later.

Wednesday, June 25, 9:00 a. m. Registration, Hotel Tuller.

10:00 a. m. A Workers' Conference.

The Purpose of the Auxiliary.

The National Program.

Analysis of the Work of State Auxiliaries on the Basis of the Official Program of the National Auxiliary, conducted by Mrs. Evarts V. De Pew, assisted by all State Presidents. This discussion is planned to be a workers' conference in the real sense of the word. The discussion will be interesting and exhilarating to any doctor's wife; but it should be especially valuable to state presidents, presidents-elect, and committee chairmen, and to the corresponding county officers.

Thursday, June 26, 9:00 a. m. Mrs. J. Newton Hunsberger presiding. Post Convention Board Meeting.

10:00 a. m. Round Table for State Presidents and Committee Chairmen. Chief Purposes of the State Annual Meeting. Adequate Preparation for the State Meeting.

Agenda for the State Meeting.

Duties of State Board Members, Especially of the President and Committee Chairmen.

MERIDIAN AND VICINITY

Dr. I. W. Cooper, Meridian, furnishes the following:

"It is with a great deal of pleasure that the continued and constant improvement in the case of Dr. S. H. Hairston is reported. He has been confined to his bed for the past five weeks following a heart attack. His condition at the present time is certainly very gratifying.

"The many friends of Dr. Julian T. Bailey rejoice with him in the improvement of Mrs. Bailey's condition. She has been sick for some several months. It now seems that she is going to be entirely well.

"The following members of our Society attended the meeting of the Illinois Central Surgeons in Memphis on May 2 and 3, namely, Drs. K. T. Klien, A. G. Touchstone, I. W. Cooper of Meridian, Dr. W. G. Gill of Newton. This was a wonderful meeting and one that was very much enjoyed by all of us.

"Drs. M. L. Flynt of Newton and I. W. Cooper of Meridian were the members of our Society who attended the meeting of the Gulfport, Mobile and Northern Surgeons in Jackson in April.

"Dr. Leslie V. Rush attended the meeting of the Alabama State Medical Association held in Montgomery during the later part of April.

"The program of the Mississippi State Medical Association looks mighty good and the various chairmen are certainly to be congratulated, and the entertainment outlined by the Vicksburg physicians together with this wonderful program certainly makes this meeting very attractive.

"Medical activities have been very quiet in this section for the past month. There is nothing else to report."

STATE ASSOCIATION MEETING NOTES

A dinner was tendered to the Past Presidents of the Association by Drs. H. H. Haralson, and S. W. Johnston at the latter's residence on Tuesday. Of the twenty-six living past presidents, twenty were in attendance. Of the six not present two were ill and the other four were prevented from attending by pressing engagements. Drs. H. A. Gamble, President of the Association, and J. Shelton Horsley, Richmond, Virginia, were guests of honor. Past presidents present were Drs. T. W. Rowland, Oxford, H. H. Haralson, Vicksburg, C. D. Mitchell, Fondren, W. W. Crawford, Hattiesburg, R. S. Curry, Jackson, J. W. Gray, Clarksdale, T. W. Jones, Jackson, D. J. Williams, Gulfport, S. W. Glass, Clarksdale, I. W. Cooper, Meridian, T. M. Dye, Clarksdale, Willis Willey, Jackson, F. J. Underwood, Jackson, Henry Boswell, Sanatorium, S. W. Johnston, Vicksburg, W. A. Dearman, Gulfport, G. S. Bryan, Amory, T. E. Ross, Hattiesburg, John Darrington, Yazoo City, W. H. Frizell, Brookhaven.

An innovation this year was the scientific exhibits by Dr. A. G. Wilde, Jackson; Dr. F. M. Smith, Director of the Warren County Health Department, Vicksburg, and the Vicksburg Sanitarium and Crawford Street Hospital, Vicksburg.

Wednesday noon the members of the Association and of the Women's Auxiliary enjoyed a boat ride on the Steamer George Miller. The trip included a visit to Lake Centennial and to the site of the New Vicksburg Bridge. Refreshments were served aboard the boat and an orchestra furnished music for dancing.

Dr. J. H. Musser, New Orleans, was the fraternal delegate from the Louisiana State Medical Society.

For the evening session on Tuesday, to which the public was invited, invocation was made by Rev. Gordon M. Reese, Vicksburg; addresses of welcome were given "On behalf of the City of Vicksburg," by Mayor W. J. Hossley, Vicksburg; "On Behalf of the Issaquena-Sharkey-Warren Counties Medical Society," by Dr. Laurence J. Clark, Vicksburg. The response to the addresses of welcome was made by Dr. R. Curtis Smith, Drew. Dr. H. A. Gamble, Greenville, delivered the President's address, "The Relation Existing Between Organized Medicine and the Public." Dr. J. Shelton Horsley, Richmond, Virginia, delivered the Annual Oration on "Carcinoma of the Stomach." Mrs. Sarah Frances Busic, Clinton, rendered two beautiful vocal selections. Mrs. W. G. Gill, Newton, was accompanist.

On Wednesday night, some four hundred members of the association and the Woman's Auxiliary and guests were entertained at the Vicksburg Fair Grounds with a barbecue and a sports card. The menu consisted of barbecued beef, fried fish, Italian spaghetti and meat balls, rolls, and cold drinks. The sports card included a four-round boxing bout, a wrestling match, and a "battle royal." During the evening Dr. Edley H. Jones, chairman of the Entertainment committee, presented to Dr. R. I. Welsh, Pine Hills, a beautiful silver golf trophy which Dr. Welsh won in the tourney. Dr. Welsh had a final score of sixty-five. His out was forty-four and his in forty-five, and the club handicap was twenty-four.

Music was furnished by the fine Saint Aloysius College band under the direction of Professor Alfred Setaro.

Automobile rides were given to the members of the Association and of the Auxiliary on Tuesday and Wednesday afternoon. The visitors were taken through the beautiful National Military Park, to the new Vicksburg bridge, and to other interesting points about the city and county.

A number of fishing trips were arranged for the pleasure of the visiting doctors and their ladies.

The registration of physicians at the meeting was 252.

WOMAN'S AUXILIARY

At the concluding session of the Woman's Auxiliary of the Mississippi State Medical Association held May 15, the following officers were elected: Mrs. L. L. Polk, Purvis, President; Mrs. G. D. Mason, Lumberton, president-elect; Mrs. Augustus Street, Vicksburg, first vice-president; Mrs. W. C. Poole, Cary, Second vice-president; Mrs. Henry Boswell, Sanatorium, recording secretary, Mrs. E. C. Parker, Gulfport, treasurer; Mrs. D. J. Williams, Gulfport, parliamentarian.

Councilors: First district, Mrs. M. L. Cockerham, Gunnison; Second district to be appointed; third district, Mrs. Jim Hill, Corinth; fourth district, to be appointed; fifth district, Mrs. Iva Parsons, Jackson; sixth district, Mrs. W. G. Gill, Newton; seventh district, Mrs. C. C. Hightower, Hattiesburg; eighth district, Mrs. W. L. Little, Wesson, ninth district, Mrs. B. Z. Welch, Biloxi.

APPOINTMENTS MADE

Mrs. Polk, the incoming president, upon assuming her office made the following appointments:

State program chairman, Mrs. Sydney Johnston, Vicksburg; State chairman for Preventorium Fund, Mrs. D. J. Williams, Gulfport.

Delegates to the American Auxiliary meeting at Detroit in June, Mrs. L. L. Polk, Purvis, and Mrs. Augustus Street, Vicksburg.

The meeting was pronounced one of the most successful the Auxiliary ever held.

These addresses, made by members of the Mississippi State Medical Association, featured Wednesday's meeting of the auxiliary. The speakers were Dr. H. A. Gamble, president of the association; Dr. F. Michael Smith, Vicksburg.

Dr. Gamble in his address emphasized the need of better facilities and more social life for the nurses in training; Dr. Boswell spoke on the need of equipment for the Preventorium at Sanatorium, and the Auxiliary is to centralize on this subject for the coming year. This will consist of equipment for the playgrounds, books, etc., for the children at the Preventorium. This preventorium is not for tuberculous children, it being for under-nourished children between the ages of 4 and 11 years. There are fifty children now at the preventorium at Sanatorium.

Dr. Smith in his talk stressed the program of study for the Auxiliary for the coming year.

At the Wednesday morning session the Invocation was given by Mrs. I. C. Knox, of Vicks-

burg, the welcome address was made by Mrs. Augustus Street, Vicksburg and the response given by Mrs. L. L. Polk, Purvis.

Mrs. M. H. Bell, Vicksburg, president of the Auxiliary, made her address which was most interesting, and which covered in detail the excellent work done by the Auxiliary during the past year.

RECOMMENDATIONS RECEIVED

At the executive board meeting on Tuesday morning recommendations made and favorably acted upon were for a state publicity chairman, for Public Health pamphlets to study in local auxiliaries and to ask for advisory council for the medical association.

It was decided the special work of the Auxiliary during the year would be for the securing of funds for the preventorium at Sanatorium.

The nominating committees appointed follow: Mrs. Augustus Street, Vicksburg, chairman; Mrs. W. G. Gill, Newton; Mrs. D. J. Williams, Gulfport; Mrs. W. L. Little, Wesson; Mrs. C. C. Hightower, Hattiesburg.

RESOLUTIONS

The following resolutions were adopted by the Auxiliary:

Whereas, the Medical Auxiliary of the Mississippi State Medical society is stressing health education and

Whereas, we have within our own state institutions for the prevention and cure of tuberculosis second to none in the United States and

Whereas, the legislature, through the efforts of Dr. Henry Boswell, has erected a beautiful and commodious building termed "The Preventorium," and

Whereas, we are informed by Dr. Boswell that many things in the way of equipment are lacking and needed—

Be it, therefore, Resolved:

That the Woman's Auxiliary take up this line of preventive health work and that a state chairman be appointed by the president to collect funds, said funds to be turned over as collected to Mrs. Henry Boswell.

Whereas we consider the suggestions offered by Dr. H. A. Gamble regarding our social obligations to the undergraduate nurse of the state of great importance.

Be it, therefore, Resolved,

That a copy of his address be mailed to every local auxiliary in the state with the request that

his recommendations be read and adopted as a definite line of work.

Be it further Resolved,

That in towns where there are nurses' training schools and no organized medical auxiliary, a copy be sent to a state-wide member of the Auxiliary, if one be available, or if not, to the key woman of the community, with the same request.

Whereas, we are informed that the Medical Auxiliary can greatly assist in looking after children who have been dismissed from the State Preventorium.

Be it therefore, Resolved

That Dr. Boswell inform the president of the local Auxiliary when a child is returned to his home with such recommendations as he deems necessary for the welfare of the child. Where there is no organized auxiliary we suggest the wife of a physician be notified.

Whereas, the future strength of the Woman's Auxiliary to the Mississippi State Medical Association depends upon support of the state and local medical societies,

Be it, therefore, Resolved:

That the local and state auxiliaries appoint advisory committees to confer with like committees from the state and local societies with the secretaries as chairmen of both said committees.

Madam Chairman, and Members of the Mississippi State Medical Auxiliary:

In behalf of the visiting ladies attending the present convention, it is the pleasure of your courtesy committee to thank the Vicksburg Auxiliary for the many courtesies extended us during our stay in the city. We shall confirm the state-wide reputation Vicksburg already enjoys of being a great convention city with the most gracious hosts and hostesses. Among our golden memories will be numbered this association with you. In fact the committee endorses numerous suggestions heard on various occasions, that Vicksburg make this a permanent affair.

Whereas, the Vicksburg Hotel has spared no effort to provide for our entertainment, and we have had the most courteous attention and service from managers and employees of the hotel,

Therefore, be it Resolved,

That we extend most cordial thanks to the hotel management in appreciation.

Respectfully submitted,

MRS. C. C. HIGHTOWER,
MRS. G. D. MASON,
MRS. W. D. McCALIP.

BOOK REVIEWS

The Care of the Nose, Throat and Ear: By W. Stuart-Low, F. R. C. S. (Eng.). 2d Ed. London. Bailliere, Tindall and Cox. 1929. pp. 89.

This little volume of 88 pages is written in a popular vein for the information of the general public. The anatomy of the ear, nose and throat are briefly described and the commoner diseases of these parts are discussed. The book is one which may safely be placed in the hands of selected laymen.

H. KEARNEY, M. D.

A Text Book of the Practice of Medicine: By various authors. Edited by Frederick W. Price, M. D., F. R. S. (Edin.). 3d Ed. Lond., Oxford Univ. Pr. 1929. pp. 1871.

The fact that this is the third edition of this single volume text book of the practice of medicine speaks for its continued popularity among the profession. The various authors of this volume are British and well known authorities upon their subject. Some 1750 pages of text have been incorporated into a comparatively small book, not, however, without some sacrifice to paper and print. The whole range of medicine is covered, including a section on diseases of the skin and another upon psychological medicine. The reviewer in looking over the book was impressed by its thoroughness and clearness. He was especially impressed by the section on diseases of the circulatory system by the editor. This subject covers some 240 pages and is the most comprehensive the reviewer has ever had the good fortune to come across in a one volume text book on medicine. The book is thoroughly up to date and a credit to the London School of Medicine.

RANDOLPH LYONS, M. D.

Diseases of the Blood: By Paul W. Clough, M. D. New York, Harper & Bros. 1929. pp. 310.

Harper & Brothers are to be congratulated for bringing out so excellent a book at a price so moderate. The subject matter is just what is to be desired—a description of the various types of blood corpuscles, a brief discussion of their origin and functions, an outline of the varieties of leukocytosis and leukopenia, together with a brief discussion of the diagnostic and prognostic value of the differential blood picture, and finally, a description of the various blood diseases. The information given is up to date and scientific and is presented clearly and systematically. The book has obviously been carefully prepared and is full of important facts brought out by recent investi-

tigations. The claim of the publishers that this book should prove a valuable companion to the physician in his practice is fully justified.

M. M. WINTROBE, M. D.

The Volume of the Blood and Plasma: By Leonard G. Rowntree, M. D., George E. Brown, M. D., Grace M. Roth. Philadelphia, W. B. Saunders Co. 1929. pp. 219.

This volume presents the information and experience concerning the total volume of circulatory blood which has accumulated since Rowntree, Keith and Geraghty introduced a dye method for determining total blood volume in 1915. The dye method is discussed in considerable detail and the criticisms which have been levelled against it from time to time evaluated. Normal values based on a study of 49 men and 25 women are presented, and their relation to body build, sex, age, and other factors discussed. The authors rightly point out the need for systematic and logical nomenclature in this field, recommend that such terms as plethora and hydremia be discarded, and propose a new classification. Their clinical cases include quite a variety of conditions but unfortunately the number studied in each group is limited. From their results it appears that many formerly maintained conceptions regarding the total quantity of blood in the body in disease must be revised. For example, in hypertension Rowntree and his associates have found normal or even low blood volume values, thus contradicting the doctrine of plethora and negating the indication for venesection in this disease. Likewise in glomerulo-nephritis they have found no "hydreic plethora" but blood volume values below normal. Admittedly the surface of the subject of blood volume has just been scratched, but this book should call attention to the importance of total blood volume studies in clinical investigation.

M. M. WINTROBE, M. D.

Disorders of the Sexual Function: By Max Huhner, M. D. 3rd Ed. Philadelphia, F. A. Davis Co. 1929. pp. 342.

Dr. Huhner very thoroughly covers the sexual disturbances commonly classified as sexual neuroses.

He clearly defines each of the conditions considered and stresses the necessity of a thorough genito-urinary examination which he states in most instances will indicate geni-urinary treatment. He considers this subject from the standpoint of the urologist who has studied these conditions with the neurologist.

MONROE WOLF, M. D.

Handbook of Bacteriology For Nurses: By Harry W. Carey, A. B., M. D. Philadelphia, F. A. Davis & Co., 1930. 3rd rev. ed. pp. 282.

This is a standard text book for nurses brought up to date. In arrangement, it follows the general lines of Zinsser's bacteriology, from which the majority of illustrations are obtained, and recounts in a general way the outstanding facts pertaining to the various pathogenic bacteria. Quiz questions for a summary conclude each chapter.

A list of suggested laboratory exercises, demonstrations and notes on the collection of material for laboratory examinations are included.

This guide leaves very little to be desired as a text for teaching purposes.

F. M. JOHNS, M. D.

Diseases Transmitted From Animals to Man:
By Thomas G. Hall. Springfield, Ill., Charles C. Thomas. 1930. pp. 350.

The motif for this most valuable little book is a statement made by Edward Jenner of London in 1796, which appearing as a prologue is striking enough to insert here in full, in spite of the usual editorial plea for brevity in reviews:

"The deviation of man from the state in which he was placed by nature seems to have proven to him a prolific source of diseases. From the love of splendor, from the indulgences of luxury, and from his fondness for amusement, he has familiarized himself with a great number of animals, which may not originally have been intended for his associates."

"The wolf, disarmed of ferocity, is now pillowed in the lady's lap. The cat, the little tiger of our island, whose natural home is the forest, is equally domesticated and caressed. The cow, the hog, the sheep and the horse, are all for a variety of purposes brought under his care and dominion."

In a very concise and readable way, the author reviews briefly, in chapters dealing with each disease, the general type of disease, history, geographical prevalence, animal and human susceptibilities; the infectious agent, the course of the disease in both man and animals, preventive or therapeutic measures, and then summarizes the items of note in each chapter. A complete bibliography accompanies each division.

In a general way, I think, all of us physicians realize that either directly or indirectly, our animal associates are responsible for some of the more rarely met disorders, but after scanning through these pages and finding some 20 or more diseases directly derived from animals, and any number of

others that may also be passively disseminated, one begins to realize the full truth of Jenner's philosophy.

The chapter on tuberculosis is especially interesting. Records are quoted showing 2.9 per cent of tuberculosis in adults proves to be bovine in type and consequently much less severe than the human variety. In children under five years of age it has been found that 32 per cent was bovine tuberculosis. And yet, medically directed health boards have allowed non-pasteurized milk to be openly sold to the public when there are 16,700 examinations on record showing tubercle bacilli in 8.6 per cent of such milk.

Actually it is much more important to prevent tuberculosis among cattle for the cattle's sake it would seem. In 1918 there were 22,212 cows passed as free from tuberculosis. Eleven years later (1929) 8,047,540 passed a triple tuberculin test. Good cows free from tuberculosis give plenty of milk; why worry about a few sickly children or undernourished adults.

Some unfavorable experimental data with Calmette's B. C. G. in calves would indicate the comparatively modern writing of Dr. Hall.

The historical references in many of these chapters will appeal to many. Apparently anthrax (charbon) goes back with plague to the beginning of things. Moses threatened Pharaoh's cattle with "murrain," the records further asserting that all the cattle of Egypt died. The cutaneous lesions, so familiar to the country practitioners of Southwest Louisiana, were first described by Hippocrates, Galen, and Pliny. In 1613 the South of Europe lost 60,000 people in one epidemic, and it is still within the writer's recollection when the ban of the killing of buzzards was lifted in this country. The modern knowledge of septicemia began in 1849 by the discovery of anthrax bacilli in the blood stream by Pollender, a French physician in Dijon.

Undulant fever, infectious abortion, tularemia, glanders, rabies, psittacosis, plague, rat-bite fever, spotted tick fever, paratyphoid, smallpox and animal parasitic diseases are discussed in a general way. There is no attempt to bore the reader with great detail and in consequence one may gather a good general up-to-date idea of the advances in knowledge along these increasingly important lines.

Aside from the knowledge of value to be gained from the perusal of such a book in its direct application to our immediate specialty, as physicians and outstanding personalities in the community we should be better informed on such diseases as are more or less common to man and animals, for

if we could talk more authoritatively with our lay friends, be they lawyers, lawmakers, scientists, detail men or even "new-cure" enthusiasts in our own profession of the large number of diseases common to man and animals much could be done to allay the ever increasing tide that runs to Charlatanism. Veranus A. Moore, the great animal pathologist, has remarked of diseases and disease complexes: "There is but one medicine. *If there are differences* they exist only in the species attacked." The italics constitute my addition to this statement.

F. M. JOHNS, M. D.

Applied Physiology: By Samson Wright, M. D., M. R. C. P., 3rd ed. London, Oxford University Press. 1929. Pp. 552.

The popularity of this book is attested to by the fact that within three years different editions have been published. This third edition follows the same general form as have the previous ones. New material has been added, such as the section on the conditional reflexes, a discussion of some of the active components of the glands of internal secretion, such as oestrin, and presentation of new material concerning glutathione. The book has much to recommend it. It gives a most excellent scientific explanation of the various physiologic disturbances that occur in disease.

J. H. MUSSER, M. D.

Practical Massage & Corrective Exercises: By Hartvig Nissen. 5th ed. rev. and enl. Philadelphia, F. A. Davis Co. 1929. Pp. 271.

This book is one whose value is greatest to those well versed in massage and corrective exercises rather than the student. It is fairly characteristic of the type of massage used and recommended by the Swedish schools and not in accord with the the more gentle types of massage thought useful in connection with inflammatory conditions.

The corrective exercises are most useful and are instructive to any one interested in this type of work. There is a tendency to deal too much with the pathological conditions, requiring the services of one whose knowledge of medicine is much greater than the author's. As a practical reference for graduates in medicine it has some value.

JOHN T. O'FERRALL, M. D.

A Text-Book on Orthopedic Surgery: By Willis Campbell, M. D., F. A. C. S. Philadelphia, W. B. Saunders Co. 1930. Pp. 705.

This new volume, on the subject of orthopedics, is a very excellent one, but the author's bent is directed more towards surgery than towards the

conservative or non-surgical treatment of bone and joint conditions. It deals in a very simple and comprehensive manner with many of the surgical conditions found in this specialty and stresses those methods which are in most common use and which are found to be the most practical. It rightly deals largely with the subject of fractures and their modern treatment, also the mobilization of ankylosed joints by present day modern surgical methods. It is recommended very highly by the reviewer as a ready reference book for most of the strictly surgical conditions arising in the treatment of bone and joint conditions.

JOHN T O'FERRALL, M. D.

Tonsil Surgery: By Robert H. Fowler, M. D. Philadelphia, F. A. Davis Co. 1930. Illus. pp. 288.

When a distinguished English laryngologist, recently addressing an American audience, in a spirit of banter, called us "The kings of tonsil operators," he, nevertheless, expressed a truth. For, if we must accept the authority of European text-books, tonsil surgery, in its refinements of technic, does not receive the minute attention bestowed upon it in this country.

So why wonder that a very remarkable monograph on the tonsil problem, surpassing any previous presentation of this subject ever ancient ever new, is the achievement of an American. Dr. Robert H. Fowler has enriched our literature with his epoch-making contribution on "Tonsil Surgery."

One hundred and two illustrations, some in color, help to clarify and emphasize the well-written text. Twenty chapters are filled to repletion with a wealth of facts, some only known to serious workers, and many more unknown to the so-called "Tonsil snatchers." The plea is for still better tonsillectomies. This goal is only attainable by a specialized anatomical knowledge of the tonsillar region and its surrounding parts. Dr. Wingate Todd has done praiseworthy research work, as reflected in this volume, on the minute anatomy of this area. We have long conjectured that the so-called capsule of the tonsils had muscles attached to it. The research evidence makes it conclusive that the jacket partly enveloping the tonsil is a reflection of the aponeurosis covering the muscles of the tonsillar fossa. The best operative procedure should remove the tonsil with no muscle or tissue attachments. There should remain an intact aponeurotic covering for the muscles surrounding the tonsillar fossa. This makes for less bleeding, less post-operative sepsis, and a better functional result. The removal of the tonsil, and nothing but the tonsil, is re-emphasized by the author.

There are many descriptions of operations by dissection, with, and without, the use of the snare, and by automatic instruments. And yet comes the chastening thought, that no one seems to be obtaining results above criticism. Which means that whatever type of operation is practiced we are still having about a 2 per cent recurrence of post-operative lymphoid tissue in the tonsillar fossa. The infra-tonsillar tissue bears the brunt of the blame for these post-operative lymphoid tissue recurrences. The author advises removal of this tissue by dissection.

We agree with the statement that the coagulation test is only of slight value. We also have found that there is not sufficient correlation between coagulation and bleeding time. We suggest that more research is needed relative to the blood platelets, for these bodies contain the much-desired coagulating elements.

Their presence in large, or small, numbers, is the pre-operative information we are seeking. We become thoughtful when it is asserted that the "hazards of general and local anesthesia are about equal." Suction and an improved technic will reduce the chance of pneumonia. Local, especially, by the deep injections recommended, has been followed by a deep cervical abscess, which is not always a slight complication. Despite the many methods practiced, we must admit our local is still too vocal.

A highly interesting chapter is devoted to focal infection. Statistics and follow-up reports in his series show the frequent relief from rheumatism after tonsillectomy in adults. In the children's group rheumatism and joint pains were complained of in only 1 per cent. We cannot overlook the fact of a cure of 33 per cent in adults. And here alone is sufficient reason for congratulation that this field of surgery can help bring about such brilliant results in a disease which is still baffling the armamentarium of scientific medicine.

We would not presume to question these encouraging results from such an authority, and yet the Medical Research Council of England, and our own serious-minded workers at Cornell or at St. Luke's Hospital, N. Y., have not established definitely that pathological tonsils were responsible for "rheumatism." Our own belief and experience is that in certain groups there is a tonsil factor.

This work is intended primarily for the laryngologist. To him it cannot fail to prove informative, and inspirational towards a striving for still safer and better technic. The anatomical drawings and illustrations descriptive of the many types of ton-

sillectomies, alone are of incomparable value. The publishers have displayed the finest artistry in the book-making itself.

HOMER DUPUY.

Treatment in General Practice: By Harry Beckman, M. D. Philadelphia, W. B. Saunders Co., 1930. Pp. 899.

This excellent volume is a worthy addition to the physician's armamentarium. The palpable neglect of the art and science of therapeutics both at college and in general practice, is the *raison d'être* of its being. It is an unusual book. Preceding the therapy of each disease is a summary of the diagnostic findings. Excellent historical notes and statistical studies are also noted. The therapy throughout is either given in quotations from original sources or condensed and abstracted. Editorial comment is made by the author whenever some is justifiable. The author has apparently had a large experience and is seemingly well-versed in his subject. His remarks are good, his knowledge sound and his judgment sane and sensible. In controversial matters, he presents both sides. He has a good sense of humor which is reflected with the interest with which the book holds the reader. The book has been brought up to a very recent date, so that almost all that is new in therapeutics is at least mentioned even if not much elaborated. Excellent special articles on glucose, sepsis and obstetrical subjects are included. A very large bibliography and a complete index are appended. The book's one drawback may prove to be its large size, but as a reference volume its presence is welcome.

I. L. ROBBINS, M. D.

Lectures Upon the Nursing of Infectious Diseases: By F. J. Woollacott, A. M., M. D., B. Ch. Oxon., D. P. H. Rev. and enl. ed. New York, G. P. Putnam's Sons. 1930. pp. 195.

This is a small book intended for nurses, giving brief but concise remarks concerning the infectious diseases, with the measures, both curative and preventive, employed in combatting them. It is a presentation of the art of nursing, well written and worth while.

I. L. ROBBINS, M. D.

Materia Medica and Therapeutics, Including Pharmacology: By Reynold Webb Wilcox, M. A., M. D., LL. D., D. C. L. 12th ed. rev. Philadelphia, P. Blakiston's Sons & Co., Inc. 1929. pp. 690.

This is a twelfth edition and this fact is proof enough that it has fulfilled its purpose to satisfaction. It is a most complete book and as its title indicates, it covers a vast field. It leaves little to be desired in such a study as it presents.

I. L. ROBBINS, M. D.

Getting Well and Staying Well: By John Potts, M. D. 2d ed. St. Louis, C. V. Mosby Co. 1930. pp. 221.

This is the second edition of an interesting and entertaining book intended for tuberculous patients and doctors. The author claims many changes in this volume but the original scheme and scope of the book is mentioned.

I. L. ROBBINS, M. D.

Aids to Dermatology and Venereal Disease: By Robert M. B. Mackenna, M. A., M. B., B. Ch. Camb., M. R. C. P. Lond., M. R. C. S. Eng. New York, William Wood & Company. 1929. pp. 236.

This compact volume of 236 pages has just about as much real material as the student or practitioner might need. Dr. Mackenna has a manner of putting his material in a concise form, writes one good plan of treatment for each disease discussed and does this in plain understandable English. It, like his volume on skin diseases is a good book to study or for ready reference. There are few illustrations.

M. T. VAN STUDDIFORD, M. D.

Sterilization for Human Betterment: By E. S. Gosney, B. S., and Paul Popenoe, D. Sc. New York, The Macmillan Co. 1929. pp. 202.

This little work constitutes a review of the 6255 sterilizations performed in the California State Hospitals in the twenty years, 1909-29. At the present time, all feeble-minded patients are sterilized before being discharged, as well as one out of every five or six new admissions among the insane. There are three known failures in the male and four in the female, which constitutes a much higher percentage of efficiency than that recorded in other series. There were four deaths in the entire series, two from the anesthetic and two from infection, one of the latter no doubt induced by the patient herself when she tore the dressing from the wound.

No deleterious effects have been noted as far as the patients themselves are concerned, and the authors naturally feel that great good has been accomplished in that those defectives who have been allowed to leave the institution are not bringing into the world more individuals of a like type. They estimate that about 6,000,000 persons in the United States have an intellectuality which is less than 75 per cent of the average, and state that Ohio alone is spending \$5,000,000 or more per year in caring for its defectives.

The authors do not think that such sterilization will prevent the birth of genius, as they feel that such an individual is not to be expected from the class of patients under consideration.

The author is an excellent and well written presentation, and is well worth a careful perusal by those interested in the sociological aspects of the question.

E. L. KING, M. D.

Gynecology for Nurses and Gynecological Nursing: By Comyns Berkley, M. A., M. D., M. C., Cantab., F. R. C. P. Lond., F. R. C. S. Eng. Rev. and enl. ed. New York, G. P. Putnam's Sons. 1930. Pl. illus. pp. 426.

The author's fifth edition, revised, is an excellent text for nurses, clearly written with a brief description of the structures of the pelvis and anatomy of the female genital organs. A general, short outline of physiology and fertilization is included. No subject pertaining to gynecology and obstetrics is omitted. The outline touches on operative technic, duties of nurses in emergencies until the arrival of the physician; detailed description of gynecological and obstetrical nursing are included, giving the preparation of instruments and general hygienic measures pertaining to the duties of nursing.

ADOLPH JACOBS, M. D.

The Treatment of Varicose Veins of the Lower Extremities by Injections: By T. Henry Treves-Barber, M. D., B. Sc. New York, William Wood & Co. 1929. pp. 120.

This is an excellent treatise covering all phases of varicose veins, with special reference to indications for treatment by injection of sclerosing solutions.

All physicians should be familiar with this method of treatment.

As a rule injections are simple and complications minor. Cases will occasionally occur in which quite the opposite is true. It is in these cases that great care and attention should be paid to the details in every respect.

In spite of the advantages this method of treatment offers for the management of varicose veins and their complications, there are some few cases that will derive no benefit from this treatment. It is this type of patient that should be guarded against.

SHIRLEY C. LYONS.

PUBLICATIONS RECEIVED.

William Wood & Company, New York: International Medical Annual, 1930.

S. J. Pridgen Company: The Ready Reference Medicine and Surgery. Monograph on Malaria, by D. Drysdale Anderson.

Merck & Company, Inc., Rahway, New Jersey: Merck's Index, Fourth Edition.

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